DOCUMENT RESUME

ED 058 496 AA 000 800

AUTHOR	Colmen, Joseph G.; Sandoval, Corazon
TITLE	Pre-Primary Education: Needs, Alternatives and Costs, 1971-1980.
INSTITUTION	Education and Public Affairs, Inc., Washington, D.C.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C.; President's Commission on School Finance, Washington, D.C.
PUB DATE	Sep 71
CONTRACT	OEC-0-71-2427
NOTE	168p.
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	Child Development; *Cost Effectiveness; Day Care Services; Early Experience; Economically Disadvantaged; *Educational Finance; Educational Needs; Enrollment Projections; Environmental Influences; Equal Education; *Estimated Costs; Learning Readiness; *Preschool Education; Preschool Evaluation; *Preschool Programs; Student Enrollment

ABSTRACT

The rationale for a national investment in early childhood learning, the needs to be met, and the costs are discussed. A number of current program models, diagnostic service centers, programs for parent education, and preparent programs at the secondary and college levels are described. Research studies and findings about different early childhood education programs are cited; more evaluative research of all early childhood programs is urged. Bureau of Census data and projections are used to show estimates of: (1) children in families by age, race, and income; (2) mothers in the labor force; (3) migrant children; (4) ethnic and geographic subgroups; (5) target population for parent education; (6) current preprimary enrollment figures; (7) costs of federally financed day care programs; and (8) regional and geographic breakdowns of current enrollment number and capacity of licensed day care facilities. A detailed cost analysis of preschool programs to meet current and projected needs and cost estimates for four different approaches to early childhood learning programs conclude the document. A 242-item bibliography is included. (For related document, see ED 058 473.) (Author/MLF)

ED 058 496

Pre-primary Education: Needs, Alternatives, and Costs, 1971-1980

Prepared by
Education and Public Affairs, Inc.

AA 000 800

Submitted to The President's Commission on School Finance

THIS IS ONE OF SEVERAL REPORTS PREPARED FOR THIS COMMISSION. TO AID IN OUR DELIBERATIONS, WE HAVE SOUGHT THE BEST QUALIFIED PEOPLE AND INSTITUTIONS TO CONDUCT THE MANY STUDY PROJECTS RELATING TO OUR BROAD MANDATE. COMMISSION STAFF MEMBERS HAVE ALSO PREPARED CERTAIN REPORTS.

WE ARE PUBLISHING THEM ALL SO THAT OTHERS MAY HAVE ACCESS TO THE SAME COMPREHENSIVE ANALYSIS OF THESE SUBJECTS THAT THE COMMISSION SOUGHT TO OBTAIN. IN OUR OWN FINAL REPORT WE WILL NOT BE ABLE TO ADDRESS IN DETAIL EVERY ASPECT OF EACH AREA STUDIED. BUT THOSE WHO SEEK ADDITIONAL INSIGHTS INTO THE COMPLEX PROBLEMS OF EDUCATION IN GENERAL AND SCHOOL FINANCE IN PARTICULAR WILL FIND MUCH CONTAINED IN THESE PROJECT REPORTS.

WE HAVE FOUND MUCH OF VALUE IN THEM FOR OUR OWN DELIBERATIONS. THE FACT THAT WE ARE NOW PUBLISHING THEM, HOWEVER, SHOULD IN NO SENSE BE VIEWED AS ENDORSEMENT OF ANY OR ALL OF THEIR FINDINGS AND CONCLUSIONS. THE COMMISSION HAS REVIEWED THIS REPORT AND THE OTHERS BUT HAS DRAWN ITS OWN CONCLUSIONS AND WILL OFFER ITS OWN RECOMMENDATIONS. THE FINAL REPORT OF THE COMMISSION MAY WELL BE AT VARIANCE WITH OR IN OPPOSITION TO VIEWS AND RECOMMENDATIONS CONTAINED IN THIS AND OTHER PROJECT REPORTS.

The President's Commission
on School Finance

Neil H. McElroy, Chairman
Mary T. Brooks
William G. Colman
Hilda A. Davis
John B. Davis, Jr.
John H. Fischer
Dorothy M. Ford
Norman Francis
Eugene Gonzales
Warren P. Knowles
David H. Kurtzman
Duane Mattheis
William E. McManus
Wendell H. Pierce
William G. Saltonstall
W. B. Thompson
Clarence Walton
Ivan E. Zylstra

Norman Karsh, Executive Director

Education & Public Affairs

1320 NINETEENTH STREET, N. W.

WASHINGTON, D. C. 20036

(202) 659-8588 & 8589

PRE-PRIMARY EDUCATION: NEEDS, ALTERNATIVES AND COSTS, 1971-1980

Joseph G. Colmen

Corazon Sandoval

The work reported herein was performed pursuant to a contract (OEC-0-71-2747) with the United States Department of Health, Education, and Welfare, Office of Education.

September, 1971

" How can we judge the worth of a society? On what basis can we predict how well a nation will survive and prosper? Many indices could be used for this purpose; among them the Gross National Product, the birth rate, crime statistics, mental health data, etc. In this book we propose yet another criterion: the concern of one generation for the next. If the children and youth of a nation are afforded opportunity to develop their capacities to the fullest, if they are given the knowlege to understand the world and the wisdom to change it, then the prospects for the future are bright. In contrast, a society which neglects its children, however well it may function in other respects, risks eventual disorganization and demise."

Urie Bronfenbrenner, Two Worlds of Childhood:

U.S. and U.S.S.R.

TABLE OF CONTENTS

Acknowledgments

Summary of Findings and Conclusions

1. Introduction

2. Importance of Early Childhood Education

3. Program Approaches for Children, Parents and Pre-Parents

4. Historical Development and Structural Arrangements for Early Childhood Education in the United States

5. Evaluative Research on Early Childhood Education

6. National Needs for Early Childhood Programs

7. Dimensions of Cost

Bibliography

ACKNOWLEDGEMENTS

This report was prepared for the President's Commission on School Finance. The Commission, charged with projecting future needs and costs for public and private education in the United States turned to Education and Public Affairs for analysis of that segment dealing with early childhood, pre-primary education. Public attention now focused on development during the early years of childhood has brought to light the work of many organizations and individuals who, over the years, have been laying the foundation for the present thrust toward more universal programs in early learning. Our report, therefore, is a product of the interest and cooperation of many persons concerned with early childhood education. We are indebted to the many following individuals, who through interview, telephone conversation or letter have given us the benefit of their research, experience, views and ideas. Apologies are offered in advance if we have inadvertently omitted other deserving contributors.

RESEARCH SCHOLARS

Laura E. Berk, Illinois State University
Benjamin S. Bloom, University of Chicago
Annie Lee Butler, Indiana University
Bettye M. Caldwell, University of Arkansas
David Cohen, Harvard University, Center for Education Policy Research
Hazen A. Curtis, Florida State University
George E. Dickson, University of Toledo
William Fowler, Ontario Institute for Studies in Education
James J. Gallagher, University of North Carolina
Albert Gardner, Institute for Child Study, University of Maryland
Ira J. Gordon, University of Florida
Susan Gray, Peabody College for Teachers
Glen R. Hastings, University of Oklahoma
Ronald Henderson, University of Arizona
Robert Hess, Stanford University

J. McVicker Hunt, University of Illinois
Robert La Crosse, Pacific Oaks College, California
J. Ronald Lally, Syracuse University
Maurice A. Lucas, University of North Dakota
William P. McLure, University of Illinois
Glen Nimnicht, Far West Laboratory for Education Research and Development
Elizabeth Prescott, Pacific Oaks College, California
Joseph Wepman, University of Chicago
Burton L. White, Harvard University

ASSOCIATIONS AND ORGANIZATIONS

American Association for Elementary, Kindergarten and Nursery Educators: Jean Corbin
Association for Childhood Education International: Munro Cohen, Neith Headley and Peggy Parker
The Brookings Institution: Alice Rivlin
Carnegie Corporation: Barbara Finburg
Child Study Association of America: Judith Katz-Geschwind
Child Welfare League of America: Rebecca Smith and William Pierce
Children's Television Workshop: Franz Allina and Robert Hatch
Day Care and Child Development Council of America: Rita Alpher
Educational Resources Information Center/Early Childhood Education: Marian Needle
Maryland Council of Parent Participation Nursery Schools, Inc.: Roberta Bergman
National Advisior Council for Education of Disadvantaged Children: Lois Paul
National Association for Education of Young Children: Milton Akers and Jean Melamed
National Committee on Children and Youth: Jill Orion
National Committee for Education of Migrant Children: Leonard Mayhew
National Committee for Support of Public Schools: Marion Bendixsen
National Congress of Parents and Teachers: (Mrs.) Fritz Kahn
National Council of Jewish Women: Mary Dublin Keyserling, Consultant
National Education Association, Research Division: Helen Kolodziey
National Governors' Conference: Allen Jensen
Parent Cooperative Pre-School International: Barbara Meyers and Bunny Pierce
Play Schools Association, Inc.: Rowena Shoemaker
Urban Institute: Joseph Wholey
Washnigton Staff Seminar: Samuel Halperin

GOVERNMENT AGENCIES

Department of Agriculture

Errol Miller, Finance Division

Department of Commerce

Elizabeth Shellbourne, Bureau of the Census, Poverty Statistics Division

Department of Health, Education and Welfare

Office of Child Development

Hank Aguirre, Migrant Division
Patricia Delaney, Indian Affairs and Migrant Division
Rossies Drummond, Head Start
Carolyn Harmon, Office of the Director
Edna Hughes, Standards Division
Douglas Klafehn, UMOI Community Representative
Jenny Klein, Education Specialist, Head Start
Michael Marquardt, Day Care Division
Sylvia Pechman, Parent and Child Centers
Edward Zigler, Director

Office of Education

Frieda Denenmark, Follow Through
Joan Duval, Bureau of Education Professions Development
James Gibbs, Division of State Agency Cooperation
Richard Hayes, Office of Social Concerns
Carol Hobson, Bureau of Elementary and Secondary Education, Elementary and Secondary Surveys Branch
Patrick Hogan, Migrant Programs Branch
Gordon Hurd, Bureau of Elementary and Secondary Education, Elementary and Secondary Surveys Branch
Julie Kesielewski, Office of Deputy Commissioner for Development
Holly Knox, Legislation
Burt Mogin, Program Planning and Evaluation Division
Thomas Moorefield, National Center for Educational Research
David Pollen, National Center for Education Statistics, Office for Development
Richard Snyder, Follow Through

National Institutes of Health

Joseph Bobbitt, National Institute of Child Health and Human Development
Jerry La Veck, National Institute of Child Health and Human Development

National Institute of Mental Health

Richard Bell
Earl Schaefer

Public Health Administration

Richard Furie, Community Health Program
Fred Peters, Health Services and Mental Health Administration

Social and Rehabilitation Service

Morris Cunningham, National Center for Social Statistics
Marshall Proctor, National Center for Social Statistics

Department of Housing and Urban Development

Patrick J. Henry, Model Cities Program
John McLean, Model Cities Program

Department of the Interior

Bureau of Indian Affairs

Mariana Jessen
Louis Conger, Jr.

Department of Labor

Lillie M. David, Women's Bureau
Katherine Gover, Bureau of Labor Statistics
Denis Johnston, Bureau of Labor Statistics
Richard Shirey, Work Incentive Program
Nancy Snyder, Welfare Reform Task Force
Elizabeth Waldman, Bureau of Labor Statistics

Appalachia Regional Commission

Irving Lazar
Ruth Hubbell
Eli March
Ann Neel

Office of Economic Opportunity

Lionel Adams, Office of Planning, Research and Evaluation, Program Analysis Division
Richard Devlin, Office of Program Development
Edith Grotberg, Office of Planning, Research and Evaluation
Lester Klein, Office of Planning, Research and Evalutaion, Research Division
Wray Smith, Office of Planning, Research and Evaluation, Program Analysis Division

Office of Senator Russell Long

Michael Stern

Local and State Government Agencies

Arizona Department of Education: Migrant Children Program; J.O. Maynes
Austin Department of Education: Lee Frazier
Buck's County Public Schools: Ronald E. Lesher
California Department of Education: Ralph D. Benner and Jeanada Nolan
Cincinnati Public Schools, Education Center: Ronald Nieman
Mississippi Department of Education: Albert Comfort, Jr.
New Jersey Department of Education, Office of Planning: Robert Weber
New Mexico Department of Education: Jacob Martinez
Ohio Department of Education: Russell F. Knight
Prince George's County Public Schools: Virginia R. Klaus

We are especially grateful to Marian Needle for her consultation and preparation of the sections dealing with historical development and program approaches to early childhood education. Her knowledge of the current research and practice in the field has been of invaluable assistance in developing the remainder of the report. Tannis Williams and Paulette Wolfson offered helpful suggestions at various stages in conduct of the study.

In addition to these more personal contacts, intensive review of the literature on pre-primary learning, particularly that of the past five years, gave us the grist for our own analysis of alternative approaches and costs for a national program of early childhood education to meet present and projected needs. In the end, of course, the conclusions and recommendations remain the responsibility of the authors.

The report which follows presents, then, the rationale for a national investment in early childhood learning, the needs to be met and the costs of doing so.

SUMMARY OF FINDINGS AND CONCLUSIONS

A convergence of theory, knowledge, research and practice in early childhood education, growing public awareness of its benefits, and political and public support for day care have created a climate out of which broad national policy will in all probability emerge. This report focuses on the educational component of early childhood programs; it does not deal with the pros or cons of getting welfare mothers to work or with providing babysitting services to middle class parents. Our concern is with maximal development of children, intellectually, socially, emotionally and physically.

The greater malleability of children under six; their rapid potential rate of development; the greater opportunity in early years to counteract the debilitating effects of poverty and thus to narrow or erase the widening gap of intellectual achievement between the poor and the non-poor; and the growing knowledge of how to establish and maintain programs for early childhood learning; all of these provide a foundation for more attention to and greater investment in the domain of pre-primary education.

Although there were occasional Federal forays into child care programs before 1965, the last five or six years have seen the Federal investment in early childhood programs grow, largely as outgrowths of efforts to combat poverty, notably through the Elementary and Secondary Education Act, the Economic Opportunity Act which spawned Head Start and Follow Through, amendments to the Social Security Act, the Work Incentive program and Concentrated Employment Program, Parent and Child Centers, and the National School Lunch Act. Actually, the Appalachian Regional Commission has counted over 300 separate authorizations for child care, administered by 18 different Federal agencies, a feature which has led to problems of coordination and reduced efficiency. More important, however, they fail to serve more than a fraction of the nation's economically disadvantaged children who

stand to benefit most from them.

Approaches to early childhood education have been diverse, ranging from highly structured, heavily cognitively-based programs to more open and affectively-oriented ones. Some program names have even entered the household vocabulary, including British Infant School, Montessori, Head Start, and the newest face on the screen, "Sesame Street", produced by the Children's Television Workshop. It is of interest to note that although program content and style have been varied, sometimes even divergent, almost all have shown positive effects when measured against an external criterion, suggesting that it may be less the method than the fact of adult attention, stimulation and interaction that promotes the success that has been found. This in part may also explain the newest emphasis upon parent education programs as a means of fostering or reinforcing the child's maximum development.

A great deal of the program research and development has been conducted with children from four to six years of age. Some work is also being accomplished with the early infant stage.(LaCrosse, Robert and Lee,Patrick, eds. pp.294-295) Surprisingly, very little is reported with children two or three years of age, possibly due to their lack of ready availability as subjects. Nevertheless, the finding that major differences in mental abilities between disadvantaged and non-disadvantaged children are not found much before eighteen months, but that the gap widens quickly after that, suggest a real possibility for preventing impending deficits by early intervention. It is at these ages that parent education programs, home visitor programs, or variations of them seem to have greatest promise, as opposed to the group-administered programs found suitable for the more mature child of four and five. This earlier intervention, coupled with diagnosis and remediation of health and nutrition problems and with social services to create a favorable home climate for the child, appears to be able to produce measurable gains in various aspects of child development.

Priority is given, in recommending early childhood programs for children under six, to the needs of the disadvantaged. At the same time, a case is made for providing the benefits of early childhood education to the children of families with incomes up to $6,900, a figure used in various day care and child development bills now under consideration by the Congress.

The costs associated with the provision of such services are given in ways that permit the reader to construct a program meeting his own constraints as to financial resources and his own specifications, using modules of content, time or approach; working with selected age groups; and enrolling children at various levels of family income. In addition to education of young children, an ideal program is seen to include research at a fixed percentage of outlay, so that there can be an ever-increasing base of knowledge and evaluation on which to build future improvements and effectiveness; and staff training, both professional and para-professional, required because of the highly labor intensive nature of the programs(about 80% of total operating costs is for manpower).

FINDINGS

1. For children of four and five

We find substantial justification for a program of group-administered, pre-primary education for children of ages four and five. Our conclusion is based on findings related to such output variables as increased "school success" or academic achievement, improved ability to adjust to the routine and life of the school, increased promotions to first grade, reductions in first grade retention, increased success on "readiness tests", gains in IQ points and reduced likelihood of dropping out.

2. For children of three

We find less substantial evidence for a program of group-administered, pre-primary education for children at age three. While three year olds are ready for some degree of socialization experience, less is known about how to manage such programs for them. LaCrosse and Patrick's (76) comprehensive survey of research finds a paucity of research on children in the two and three year age groups. Until further research has been completed, therefore, we would recommend centering educational programs for three year olds around the home and parents or, when necessary, in family or home day care as opposed to a more formal educational environment.

3. For children from birth to three

We find strong justification for educational programs for parents of children from birth to six and especially for parents of children up to age three or four. A broad range of methods for providing parent education, with and without home tutoring, has been tried, with invariably good results. From experiences and studies involving parent education come reports showing significantly greater gains (IQ) for the children of mothers in such programs than for children of mothers in control groups, as well as improved performance on tests involving perceptual, visual and vocabulary skills. Furthermore, evidence that differences in various abilities between socioeconomic groups generally begin to appear in the second year suggests that parent education early in the child's life may work to prevent the gap that appears then and later widens.

4. Learning by television for preschoolers

We find that specially designed television programs can produce achievement gains

for children of all socioeconomic groups. For example, after one year, children who viewed the Children's Television Workshop program, Sesame Street, made test score achievement gains on tests designed to assess the expected outcomes of the program. Interestingly, gains seemed to be independent of socioeconomic status, sex or regional groupings in direct relation to the amount of viewing by the child. The cost of production and distribution, estimated at $1.00 per child per year, lead to a recommendation that programs of this kind be made a part of the experience of all children, not only at home, but at group facilities as well, from home and family day care to full day kindergartens.

5. Diagnostic evaluation in early childhood

We find strong evidence for the importance of complete medical, psychological, social service and educational diagnosis services at the time of entry into preschool programs, along with provision for referral and treatment where necessary. The Head Start experience, for example, which found large num bers of children with educationally related medical deficiencies, such as poor vision, bone and joint disorders, mental retardation and severe psychological difficulties, demonstrated that a program of education without reference to the rest of the child could only be partially effective.

6. Maternal health and infant health and nutrition

The role of both the pregnant mothers' and the infants' nutrition in the development of brain cells has been documented (Dayton, 1969). In addition, evidence that prenatal care can reduce prematurity, birth trauma, measles and other conditions which may affect a child's later learning capacity, emphasizes the need for universal medical services for pregnant mothers. The White House Conference on Children, in its report "Profiles of Poverty", estimated, for example, that "one-fourth of the

cases (of mental retardation) could be linked to genetic abnormalities, infections such as German measles during early pregnancy, birth accidents or postnatal infections or trauma...In the remaining cases, inadequacies in prenatal and perinatal health care, nutrition, child rearing and social and environmental opportunities are suspected as causes of retardation." (p. 51, underlining provided) Correction, or where possible, prevention, of such medical and learning disabilities at an early age can have substantial positive effects on the child's later learning and development. On a cost basis alone, it is estimated that care or education of a retarded or handicapped child is two or three times that of support of a child in regular school. (McLure, William and Pence, Audra, 1970, p. 96)

7. A needed research and evaluation base

We find the need for a national master plan for an expanded and continuing program of research, demonstration and evaluation of programs on development of infants and children up to six. Gaps in knowledge at the ages of two and three are particularly worthy of priority as a basis for policy and decision making about the best ways to meet their developmental needs.

8. Models for training of staff for early childhood programs

We find a need for models of staff training as well as pre-service and in-service training programs for professional staff, aides, assistants and paraprofessionals, both volunteer and paid. It has been suggested that number, quality and personal characteristics of staff are more important than level of professional training. (Abt Associates, 1971) Development of selection systems for these positions and training are therefore urgently needed.

CONCLUSIONS AND RECOMMENDATIONS

From the foregoing findings, we advance the following recommendations:

1. Group preschool participation (full-day or half-day, depending on need) for all four and five year old children from families with incomes below the designated poverty level ($3,968 in 1970) and preferably for all children from families with incomes of $6,900 or below, with provision for payment for others earning higher salaries on a sliding scale basis. Staffing patterns for kindergartens should move toward an adult-child ratio of 1:10; for day care centers of 1:7; in keeping with the Federal Interagency Day Care Standards.
2. Planned educational components built into day care programs for children from birth through five years of age with working mothers.
3. Parent education programs for parents of children from birth through age three.
4. Provision by all secondary schools and colleges of child development programs to give students the understanding and skills necessary as future parents. As part of these courses, each high school and college would establish a preschool program and enroll children. A professional teacher would direct the program. High school students would serve as classroom aides, thereby gaining practical experience related to their courses in theory and practice of child development. At the same time, assuming an average of only twenty children in each of the 24,000 secondary schools

and 2,000 colleges in the country, between 500,000 and 600,000 pre-school spaces would immediately become available.

5. Development and broadcast of television and other media programs, such as Sesame Street, as supplements to home or school based programs, to serve both children and parents.

Other recommendations aimed at assuring quality or efficiency in early childhood learning programs are proposed in the text of the report. Some of these are:

..Early medical, nutritional, psychological and educational diagnostic services, with referral for treatment as necessary.

..A nationally designed master plan for research and evaluation, funded as a percent of the Federal outlay for all pre-primary programs with immediate priority to be given to the three year old child. Research of a longitudinal nature, with replication and dissemination provisions and involving development of reliable assessment instruments, should be encouraged.

..Development of models for staff selection and training: pre-service and in-service; professional, aide, assistant and paraprofessional; volunteer and paid.

..Community planning and coordination for early learning programs in order to (1) reduce costs or increase efficiency of services; and (2) provide multiple options to meet individual needs both of the children as to objectives, style and content and of parents as to schedule and program preference.

Programs in early learning should be characterized by at least the following criteria:

--Individualization in meeting the unique needs of each child.

--Heterogeneity of enrollment, as to socioeconomic status, sex, race and

where possible, age.

--Continuity of learning experiences and articulation with higher age-level educational programs.

--Parent involvement in planning and evaluation as well as in teaching and providing other services, when parents' work schedules permit.

--A satisfactory ratio of adult-child contact, small class size and continuity for children based on association with the same adults over time.

--Availability of consultation services as needed, both in substantive areas of learning and in evaluation methodology.

--Presence of at least one fully qualified professional in each program of early childhood education, along with use of aides and paraprofessionals, particularly parents indigenous to the community from which the children are drawn as a means of adding to the child's security, bridging communication gaps between the teacher and the children, and decreasing the pupil-staff ratio.

--Recognition that the home is the principal education base for the child; that day care or preschool is supplementary (ACEI, Daytime Programs for Children). Steps should be taken to elevate the knowledge and skills of parents and older siblings in child rearing and educational practices.

--Programs may be operated by a variety of institutions, including public schools, other public agencies, voluntary organizations, religious and proprietary (including franchised institutions). Licensure of facilities and frequent inspection to assure physical health and safety standards should be mandatory. In addition, technical consultation in early education, provided by the public schools, nearby colleges or other acceptable professional sources should be available and used.

--A management information system for effective planning, analysis and evaluation of early childhood education programs must be developed, so that a more adequate knowledge base for action can be accumulated than is available now; similarly for a standardized cost accounting system.

Needs and Costs

It has been estimated that of the 1,217,000 poor four and five year old children who might have gained significant benefits from preschool education in 1970, only 411,000 were actually enrolled. There is presently, therefore, a wide unsatisfied gap to which national concern should be directed. By 1975, we project program capability to accommodate all poor four and five year olds, totaling 1,013,000 to be enrolled in preschool educational programs.

For poor children younger than four whose mothers are in the workforce, we recommend education in family day care homes. There were 600,000 poor children under four whose mothers were in the labor force in 1970, but the capacity of licensed family day care homes amounted to only 147,000 spaces. It has been estimated that about 607,000 poor children younger than four with mothers in the labor force might need full-day educational care by 1980.

More detailed analysis of the statistics on needs can be found in Section VI. Our recommendations focus on educational programs in facilities, whether in kindergarten or prekindergarten, for all poor four and five year old children. At the same time, they provide for full-day programs for all children under six of working mothers, and a migrant preschool program that follows the migrant children from their home states to the user states.

Costs for the total program mix in 1970 are estimated at $3.62 billion. Existing appropriations targeted toward poor preschool children amount to $1.043 billion. Thus, only about $2.6 billion of new appropriation would be required to carry out the pro-

jected program, assuming transfer and application of existing funds to the new program. (Section VII)

Anticipating that the first year or two will be devoted to training and capital outlay, operation of preschool education on a nationwide scale would be fully available to the target population by 1975. Research and development activities would be expanded, especially at the outset, to study the basic issue of whether three year olds should participate in a planned group-administered educational program in special facilities.

The need for a more systematic and effective information system on needs and costs is strongly emphasized; its absence has rendered difficult the acquisition and development of data with a level of precision that would have been desirable in the preparation of this report.

Funds for a program of early childhood education will, in the last analysis, be decided in competition with other educational priorities and still other non-educational worthwhile goals. This report concludes that preschool education, particularly for children of low income families, can have important consequences and therefore warrants high priority in the competition. Costs can be reduced, as was noted above, by various reductions in any number of ways: the target population served, the duration of the program, the nature of the program (TV or Day Care Centers), the adult-child ratio, the amount of accompanying research, the amount of staff training provided or stretching out implementation of the program. It is important to recognize, in looking for needed monies, that over $1 billion in funds are already being appropriated, (e.g., kindergarten programs being directed to child care or learning in the States, day care programs, School Lunch programs, ESEA Titles I and III, Cooperative Research Act, NIMH, NICHD research funds, Education Professions Development Act, etc.) and that other funds will become available at such times as day care or child development legislation now being debated

is passed by the Congress. The amount of new money required would thus depend upon the scope of the program to be mounted and on the aggregate of existing resources that can be applied.

In a letter to Education and Public Affairs dated June 15, 1971, William McLure sums it up well: "Education is not a commodity that can be transacted by governmental fiat; it is an investment in people, in human feelings, attitudes and skills. We need to shape up our spirits as well as our pocketbooks." Knowing what we know now, we have nothing less than an obligation to a child to help him become whatever he can, whenever that assistance must be given. The evidence is that it is better to give it early than late.

INTRODUCTION

Until about 1965, education of children at the pre-primary level was viewed by the public and by many schoolmen as nice, but not altogether critical. Notwithstanding the growth in establishment and enrollment of children in kindergartens in the United States, their financial support by the states has been small ($150-$800 per child in 1967-1968). Other than kindergarten, efforts at early childhood education prior to 1965 were sporadic and fragmented. Montessori schools, parent cooperatives and public or private nursery schools have represented the major directions; enrollment in them in 1970 was 1,094,000.

In 1965, Head Start emerged as a response to the needs of poor children, a comprehensive service program incorporating health, nutritional, social service and parent involvement, as well as educational components. Its impact has given impetus to legislative debate on programs to incorporate early childhood education as a part of day care in welfare reform bills. Support from a coalition of 26 public interest groups, including women's liberation, labor, teachers' groups, welfare mothers, civil rights groups, church groups and others, has given the legislation significant political momentum. (Rosenthal, Jack, New York Times, June 14, 1971). As public awareness has increased, research evidence accumulated over the years as to the value of early childhood learning has been spotlighted, changing parental attitudes from an essentially laissez-faire position on early intervention to one that sees planned learning programs reaching into the early years as not only acceptable but necessary for a child's optimal development.

The basic focus of this report is on early learning. While there may be worthwhile social values in the goals of enabling low income mothers to leave welfare

rolls by working, or of providing ways for middle-class mothers to apply their skills or interests outside of the home, our emphasis is not upon the mother, but the child. We recognize that there will be parents who want to bring up their children at home. We look at pre-primary programs of day care, therefore, primarily from the point of view of their learning functions, not their custodial functions. To the extent that other services, such as nutrition, health or social work actually affect the capacity of the child to benefit maximally from the educational program, however, we include them as aspects of the educational program.

Our population is, by and large, the child under six, even though children at six years of age or older may, for one reason or another, be enrolled in a kindergarten or other pre-primary program. Within the under six population, we place greatest emphasis for organized program planning on the ages of four and five, not because learning of infants and children under four is less important, but because the program implications of infant learning as a group activity as yet only slightly discerned.

Furthermore, as a priority for national program planning, we have targeted on the population of children from socioeconomically disadvantaged families, those who fall under the poverty level ($3,968 for a non-farm family of four in 1970), many of whom now receive Aid to Families with Dependent Children. For the children of these families, early learning efforts have the potential in part to break the cycle of poverty by helping to insure acquisition of basic skills so necessary to later achievement of higher economic income. In effect, it is the place where "equal educational opportunity" can most readily, and possibly most productively, be introduced.

Beyond the poverty level group, consistent with legislation on Day Care now under consideration by the Congress, we expand our interest to include children of parents with incomes up to $6,900 per year, for whom the full cost of early childhood education is often beyond their capacity to finance.

In studying the early learning field, we have found wide divergence between approaches, but at the same time, successes for many of thes divergent programs. From this finding, we postulate not a single programmatic approach but rather availability of multiple options, through which the differing needs and desires of parents can be met; the individual abilities, interest and styles of the child can be matched; and the varying needs of inner-city, suburban and rural communities can be realized. This point is made forcefully in a paper by Gerald S. Lesser, "The Need for Diversity in American Day Care":

> "In countries other than the United States, Day Care usually reflects a given nation's effort to design the single most effective program for its children...based on the assumption that the children are sufficiently similar that once the best program is developed, it will be maximally effective for all...(However) our pluralism demands a Day Care system that provides a multiplication of opportunities and programs fitted to the diversity of our children and families."

The consequences of broader enrollment in pre-primary programs for children are elaborated elsewhere in this report; the consequences for existing public schools, however, bear mention here. As children reach the first grade with improved perceptual, cognitive and language skills, and with more mature ego and interpersonal development, schools will have to articulate their programs more closely with those of preschools from which children are coming. This means that curriculum, teaching styles, classroom management and formulation of objectives must

undergo re-thinking. The potential for change in elementary school practice as a result of large scale participation in preschool is, therefore, enormous. The Carnegie Corporation, in one of its annual reports, anticipates this outcome:

> "The final great issue is what should or must happen to the elementary schools and by extension, the rest of the educational system when and if early learning programs become common, as it now seems they certainly will."

To prepare for this, schools must begin now to inspect what is happening in early learning and to orient themselves to new efforts that afford continuity and insure progress to children entering the system. Descriptive reports from the preschool of each child's progress and responsiveness to particular learning methods would be valuable in helping the public school provide for smooth transition. Observation and participation by first grade teachers in early learning programs would also help in minimizing the disruptiveness of discontinuity for the young child.

While emphasis is given to planned learning experiences in a group setting, strong support is accorded improvement of skills of parents as "teachers". Since infants and young children spend the major part of their lives with parents, it stands to reason that parents, if knowledgeable, can provide the kinds of experience and environment most conducive to learning. Parents want to be able to aid in the optimal development of their children, and there is evidence that they will participate in programs which upgrade their knowledge and skills for doing so.

Two Presidents have spoken of the importance of early childhood learning. President Nixon observed that "The process of learning how to learn begins very early in the life of an infant child"; and further that "All American children (should) have an opportunity for healthful and stimulating development during the first five years of life." President Johnson noted: "In education, in health, in all human development, the early years are the critical years." These observations have

been echoed and amplified now by both Houses of Congress, associations of professional educators, others representing a variety of children's interests, unions, federal departments, and a wide variety of persons engaged in research representing education, psychology, sociology, physiology and medicine.

What has led to this groundswell of opinion is documented in the following pages, along with alternative ways in which this interest can be translated into a financially manageable, voluntary national plan for action.

IMPORTANCE OF EARLY CHILDHOOD EDUCATION

The demand for vastly expanded day care and early childhood education services is becoming increasingly vocal. The public at large, reinforced by the work of numerous researchers and practitioners, is coming to the inevitable conclusion that early childhood education is important, if not for all, at least for a very large segment of preschoolers. The evidence is certainly not completely in on the long term effects of planned early intervention, but the trend seems clear.

The youngster from birth to six years of age is highly malleable and in a state of neurological readiness for appropriate stimulation and learning. As observed earlier, an overwhelming amount of intellectual development takes place during this period. If this is so, early stimulation and other learning opportunities can have far-reaching consequences on the child's general learning pattern and later development. (Palmer, Judith, 1966, p. 5).

Viewed from this vantage point, it is much more difficult to rescue a child who gets off to a wrong start than to institute planned developmental procedures at an earlier period, simply because it is easier to learn something new than to stamp out and replace a learned set of behaviors. (Weber, E., 1970, p. 44; Bloom, B., 1965, p. 11)

Much that is significant is learned prior to six and rather, for example, than viewing reading as the beginning of school-related learning, reading can be viewed as the culmination of a series of learning experiences that begin at the time the child starts to speak, some 4 1/2 years before he enters the first grade. (Frazier, A.,ed., 1968, p. 4.) As noted by Bruner,... "the staggering rate at which the preschool child acquires skills, expectancies and notions about the world and about people;

the degree to which culturally specialized attitudes shape the care of the child during these years--those are impressive matters that lend concreteness to the official manifestoes about the early years." (Bruner, Jerome S. 1970, CED Supplemental Paper #34)

In 1961, J. Mc Vicker Hunt emphasized the importance of early childhood experience, not only challenging the notion of fixed intellignece, but offering evidence that stimulation as part of early experience could prevent occurrence of intellectual deficits. (Hunt, J. Mc Vicker, Intelligence and Experience, 1961) If having certain experiences during the early years is critical, therefore, more planning of a child's environment may be needed, even as early as the first days following birth. Considerable research now under way tends to support the view that conceptual learning sets, habits, patterns and interest areas may well be favorably established at early rather than at later stages of the developmental cycle, but the conclusions as to specific program formats for doing so at this writing are much less than clear. (NEA, 1965,p.5)

As a result of assumptions that children learn from birth, and therefore, that earlier stimulation and other interventions may prevent some observed disadvantaging differences between groups of children, educational programs for infants have been developed. Among the most promising of these are approaches increasing parental skills and understanding in dealing with the child's developmental processes at home. Such approaches seem to be far less costly and, from demonstration projects under way, as effective as group or central day care centers for infants. It must be kept in mind, nevertheless, that most infant day care exists to provide care for children of working mothers.

Special Importance for the Economically Disadvantaged

Early educational intervention for the poor takes on a much higher priority, particularly for those parents who desire success for their children in learning academic skills as prerequisite to escape from poverty. Studies have shown that, while intellectual deprivation begins to reveal itself in ever widening gaps as children mature, infants of poor families do not differ greatly from children of middle-class families in intellectual functioning. By the age of 18 months, however, children of poverty begin to differ from middle-class toddlers in language development and ability to make sense of the world. (Pines, Maya, NEA Journal, 1968, p. 43.) If the deprived condition exists into later years, the effects are likely to become more permanent. (Chesteen, H., et al. July, 1966, p. 46) Although reference is made to children of poor families, the reader is cautioned to remember as Edward Zigler noted in testimony before Congress, that:

> "The poor in our country do not represent a homogeneous group of individuals, all of whom can be lifted from poverty through the expenditure of a given number of dollars per family. At one extreme we have economically disadvantaged families that are intact, upwardly mobile, and who need very little assistance in order for them to enter the mainstream of our society. At the other extreme we have the demoralized, one-parent family whose dependency has become an acceptable adjustment to society rather than a state of affairs which must be avoided or corrected. We have poor families at various points along the continuum defined by these extremes."

Studies have also shown that school dropouts and school failures, represented in disproportionately higher measure among the poor, could be traced to unsuccessful competition in the first two years of school. (Chesteen, H., et al., 1966, p.5) Certainly the trend can be extended back to preschool years when readiness for academic learning can be expected to occur. And while efforts at enrichment in the elementary school can significantly affect academic achievement, personality and mental maturity,

453-405 O - 72 - 3

they fail to compensate fully for early experiential isolation. With increasing age, it becomes more and more difficult for disadvantaged children" to develop compensatory mechanisms, to respond to special programs, or to make the psychological readjustments required to overcome the accumulative effects of their early deficits."(Deutsch, Martin, 1963, p. 177).

Observations of infants in the homes of many poor have yielded conclusive evidence of severe physical, social and emotional deprivation. Lack of food, poor nutrition, inadequate housing, evictions, unstable family relationships, lack of attention and affection, inadequate models for language learning, lack of verbal stimulation, limited experiences, and other environmental stresses and deprivations cannot fail to affect the development of these infants. Initial observations have suggested that some infants have already adapted to a low level of intellectual stimulation, e.g., thay may continue playing with a single toy in a perseverative manner far longer than most infants, or may be passive and apathetic, rather than active and interested in their surroundings. If the preschool experience of a child has not prepared him for school, school experience can only lead to frustration, failure and utlimately escape. Deutsch's work confirms that children from deprived background display inadequacies which can only be compensated for by planned intervention at earlier periods of intellectual development. (NEA, 1965, p.35). Caldwell supports this position: "From the literature dealing with the effects on disadvantaged children of early intervention, at least three currently valid conclusions may be drawn: a) enrichment helps, although b) the effects appear to dissipate quickly unless continued support is provided, and c) early enrichment efforts have a greater likelihood of producing lasting gains." (Caldwell, Bettye, April, 1969).

Importance for Middle-Class Children

While immediate attention is essential for large numbers of children of the poor, the need for provision of early childhood educational experiences to a broader band ot the population is nevertheless also impressive. First, an arbitrary income level often does not demarcate those who require intervention from those who do not, since not all deprived come from impoverished homes nor are all impoverished children deprived. (Nimnicht, Glen, 1970, p. 42) But beyond the artifact of a socio-economic cut-off point, there are other compelling reasons to expand coverage to include at least children from lower middle-class, or even middle-class families:

--A study by Urie Bronfenbrenner shows that while children from achievement oriented homes tend to excel in performance, they also tend to be more aggressive, tense, domineering and cruel. (Weber, E., 1970, p. 42). At least in the non-cognitive areas, then, preschool education may be of vital importance to these middle-class children.

--Within any level of the American socioeconomic structure, if parents are preoccupied with personal problems, possess selfish interests, or have other limitations, they cannot respond appropriately to meet the needs of their youngsters. For those children, preschools may serve to compensate in part for some of the deficits of the home environment and to aid in development of a greater sense of security and self concept.

--In an urban context, many children are enrolled in preschool programs because of absence of available playmates in the immediate neighborhood. For them, social learning becomes an important objective. (Frazier,A.,ed., 1968 c., p. 3).

--"The lack of enrichment in young mothers' lives often results in poor quality child care and supervision...Frequently they are not educated in any way

for motherhood." (Parent Cooperative Preschools International, 1970).

Family finances for the group above the poverty level are often insufficient to meet the costs of preschool programs. According to the report on preschool education by the Education Commission of the States, "...perhaps three-fifths of the population have incomes large enough to prevent their children from attending Head Start, and yet cannot afford provate programs." Mary Dublin Keyserling estimates that:

> "The great majority of those who need day care services are middle income families. Of all families with children under 6,about 8% had incomes of under $3,000 in 1968. 11% were in the $3,000 to $5,000 bracket. About one half had incomes between $5,000 and $10,000. It is mothers in the middle income groups who are most likely to be in the labor force; their labor force participation rates are significantly higher than those with over $10,000 a year income. Large numbers of them seek day care for their children and have been finding it increasingly difficult to obtain it at a price they can pay." (Keyserling,M.D., Nov. 9, 1970).

Supplementary Benefits of Comprehensive Early Learning Programs

A discussion of the value of early education should not close without mention of the possible health and other benefits of an organized comprehensive pre-primary program. In particular, the opportunity for early examination, diagnosis and treatment, not only of learning difficulties but of health, nutritional, social and psychological problems can go a long way toward preventing more serious, possibly irreversible damage if treatment is delayed. As revealed in an examination of two million children enrolled in Head Start programs:

180,000	had eye defects; 60,000 needed glasses
20,000	had bone and joint defects
40,000	were mentally retarded or had a learning problem requiring specialist evaluation
over 2,200	had tuberculosis
1,300,000	dental cases were found, with an average of 5 cavities each
5-10%	had psychological difficulties sufficiently severe to prevent normal development.

(U.S. Dept. of Health, Education and Welfare, Head Start, 1970, p. 9)

Conclusion

The experience of Head Start and of a number of European programs which have provided planned educational programs at the ages of four and five demonstrates what theoreticians and researchers have been saying, that important learning can and does take place at earlier ages than we have heretofore acknowledged. The value of these pre-primary educational programs is further reinforced from the results of an interview study with first grade teachers who seemed to agree "that the right preschool program can go a long way in insuring the child's success in first grade. (Grade School Teacher, 1967, p. 208)

Notwithstanding the accumulated values of early learning, it must also be noted that there is no evidence to indicate that all children under six should be in a classroom three hours a day, especially where the necessary environment and parental skills exist at home to assure optimal intellectual, physical, social and emotional development. (Nimnicht, Glen, Compact, p. 6) Early learning programs are advocated as a supplement to, not as a substitute for the parent as teacher, since it is recognized that young children do learn, with or without special programs. For the millions of children under six who do not have the advantage of the beneficial environment required to advance their learning, however, evidence pieced together from many sources strongly supports a broader base of available educational services for them, and most particularly for socioeconomically disadvantaged children who appear to suffer the greatest deficits.

PROGRAM APPROACHES FOR CHILDREN, PARENTS AND PRE-PARENTS

Theoretical Bases for Early Childhood Programs

Theoretical underpinnings for today's practice in child development and education may be traced to Rousseau, Voltaire and Locke, and more recently to the thinking and writing of Piaget, Skinner, Freud and others. (Cowles, Milly in Educational Leadership, May, 1971, pp. 792-794) These and other theorists have attempted systematically to explain various aspects of development, such as the manner in which a child thinks or learns, the influence of society on the child, a child's affective growth, or the importance of the child's interaction with his environment.

In a comprehensive article in Child Development (Dec., 1968) Lawrence Kohlberg defines child development theories as falling into three categories: (1) maturational (2) cognitive-developmental or interactional, and (3) cultural.

(1) The maturational view. Within this line of thinking falls the work of investigators like Gesell (1945) who held that development was a matter of predetermined growth based on principles of psycho-physical maturation. While less accepted today, the concept of norms for describing specific achievements at pre-designated ages has served as a generally useful set of guidelines. Another thread in the "maturational" school derives from the psychoanalytical persuasions of men like Freud and Erikson. In their psycho-sexual-personality framework, the view is taken that education must be planned to help a child cope with a world in which language, cognition and perceptual-motor learning are important because because they contribute to

the broader development of "competence" and "healthy functioning". The "traditional" nursery school, which provides opportunities for "unfolding" of social and emotional qualities of the child is an illustration of a program based on this theoretical model.

(2) The cognitive-developmental or interactional view is held by such theorists as Piaget, Werner, Montessori, Vygotsky and Dewey. Their thinking is

> "based on the premise that the cognitive and affective structures which education should nourish are natural emergents from the interaction between the child and the environment under conditions where such interaction is allowed or fostered." (p. 1015)

This theory, postulating transactions between the developing child and his environment which require adaptation, accommodation and assimilation, does not consider the child to be simply an object waiting to unfold over time. By interacting with his environment, it is believed that qualitative changes take place in his cognitive structures.

Along with Piaget, Hunt and others, Jerome Bruner caries forward the "cognitive-transactional" view of a naturally active, seeking, adapting being who learns and is shaped by continual transactions which he often initiates with the environment. The purpose of education, from his point of view, is to plan "environmental encounters" that respond to the child and match his level of development, at the same time allowing him a great deal of choice. Piaget's careful research led to the conclusion that the more a child sees and hears, the more he is ready to see and hear; the more he copes with his environment, the more able he is to cope and at a higher mastery level.

An example of pragmatic applications of these theories include the British Infant Schools, which use structured materials and provide practice in sensori-motor activities and in concrete operational tasks. Because of its primary emphasis on cognitive learning, this theoretical view has also been successfully implemented in models for disadvantaged children. (e.g., the cognitively oriented curriculum developed by David Weikart and others.)

J. Mc Vicker Hunt and others further question the unduly depressing impact of the genetic maturational view, stressing instead the importance of environmental factors on learning. Intelligence is seen as a dynamic process subject to the influence of innumerable experiential factors. Hunt believes further that experiential deprivation not persisting too long is substantially reversible. He lays to rest the concept of development as fully laid down in the genes, giving equal recognition both to environment and heredity in intelligence, personality, and "competence".

(3) The learning theory or cultural training point of view, which can be traced from John Locke through Thorndike and Skinner. This thinking

> "assumes that what is important in the development of the child is his learning of the cognitive and moral knowledge and rules of the culture and that education's business is the teaching of such information and rules to the child through direct instruction." (p. 1015)

Accepting largely that the child becomes the adult his environment has made him, a case is made for a behavioristic-environmental point of view. In this conceptualization, which revolves around conditioning theories, external rewards and punishment are believed to reinforce the development of specified learning behaviors. If behavioral objectives can be explicitly

stated, application of specific learning strategies, along with appropriate reinforcements, will lead to behavioral change in the child, of a degree measurable against criterion-referenced behaviors stated in the objectives. An example of a program with this theoretical base would be the direct instruction model of Bereiter-Engelmann or the behavior modification approach.

While the foregoing trends of thought provide rationales for early childhood education, it was for Benjamin Bloom to elaborate a form of cost-benefit for them. In 1964, Bloom hypothesized the consequences of a restricted type of environment on intellectual development as representing a potential deficit from birth to four years of age of as many as ten IQ points, and from four to eight of another six IQ points. (Gerall, Helene and Crovetto, Lorraine, 1966, pp. 3-4). Stated differently, Bloom projected that "in terms of intelligence measured at age seventeen, about 50% of the development takes place between conception and age four, and about 30% between ages four and eight, and about 20% between the ages of eight and seventeen." (Palmer, Judith, 1966, p.5; McLure, William and Pence, Audra, 1970, p. 19) These conclusions set the stage for Head Start Programs by postulating that educational intervention between the ages of three and five can raise the IQ of a culturally disadvantaged child as much as 10 to 15 IQ points. (Gerall, Helene and Crovetto, Lorraine, 1966, p.6)

The general conclusion of these modern theoretical models of early childhood learning is that intelligence is not fixed, nor is development totally pre-determined. There are "adequate data to support the contention that the culturally deprived child benefits from compensatory education in terms of improvements in general intelligence, language abilities, perceptual discrimination and self-confidence. (Gerall, Helene and Crovetto, Lorraine, 1966, pp 12-13) Decrying the past and present philosophy of leaving much of the child's early development to chance, Hunt challenges that "The problem for the manage-

ment of child development is to find out how to govern the encounters that children have with their environment to foster both an optimally rapid rate of intellectual development and a satisfying life." (Caldwell, Bettye M. in Merrill-Palmer Quarterly, 1970, pp. 262-263)

Those who prefer the eclectic point of view favor the education conceptualization which addresses the "whole child", recognizing the importance of cognitive processes, but not necessarily less the social, emotional and physical processes for achievement of "competence" as a child and as an adult. Edward Zigler sums up why.

> "The child's history of deprivation or failure, his motivation for attention and affection, his wariness of adults, his views of himself, and his expectancy of success are just as important determinants of how he functions as his formal cognition. If we are going to fulfill our obligation to the children in our care and the society in which both they and we are members, we must be equally concerned with both the cognitive and the personal development of the child."
> (Zigler, Edward, May, 1970, p. 412)

The present debate revolving around theories of early childhood learning will assure lively discussion for some time to come, and hopefully, will stimulate continued effort at model development and hypothesis formulation. From our point of view, those programs which address the "whole child" and which draw eclectically and complementarily from the potpourri of theoretical formulations are most likely to meet each child's variable needs and to diminish the possibility of later, unaccounted for, negative side effects in his growth.

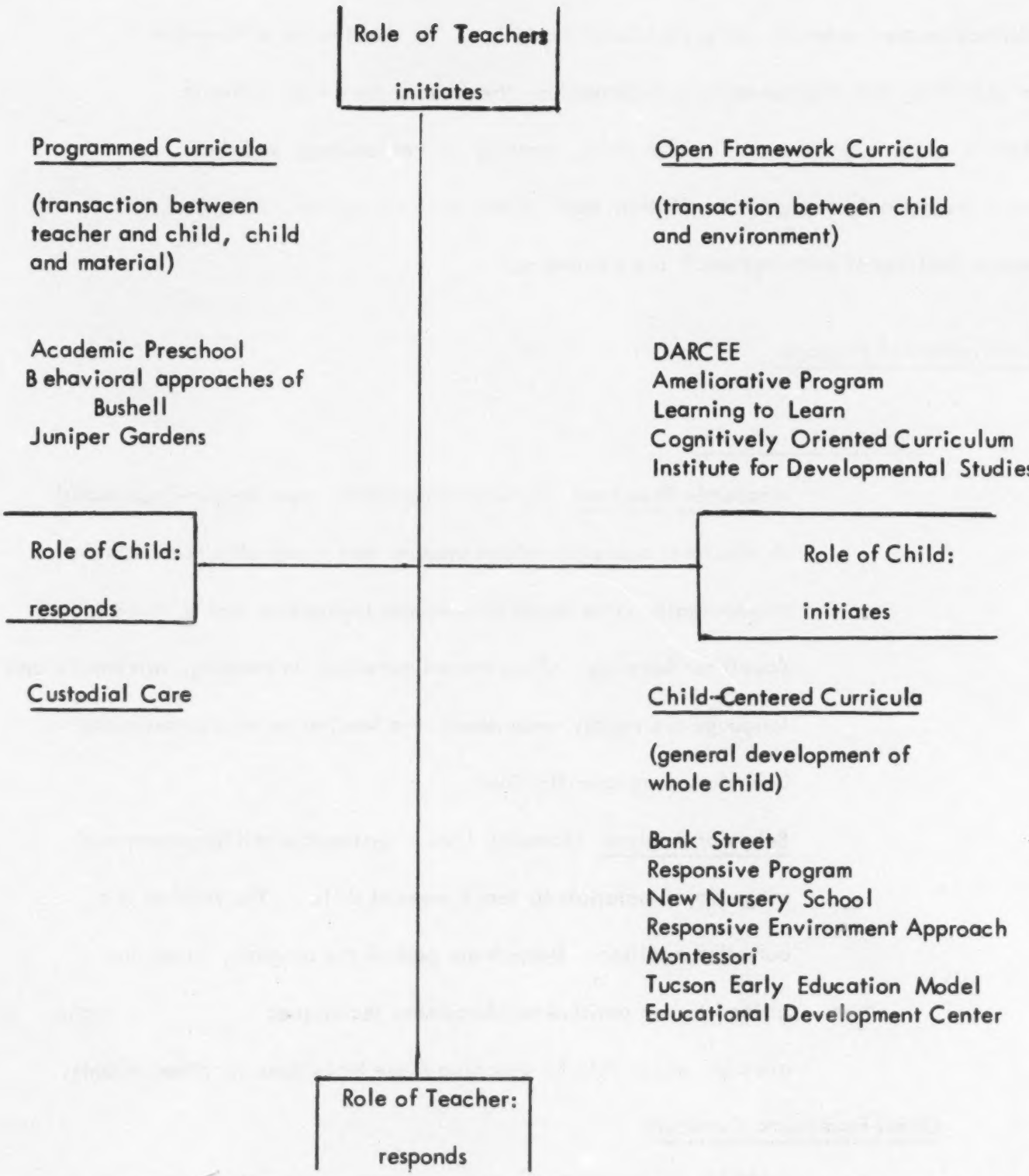
A Conceptual Schema for Preschool Programs

Deriving their objectives from the various theoretical positions about development, many preschool program curricula focusing on children from three to five years old have been developed in recent years. Several have gained national and international recognition. The intent of this section is to describe a number of current program models, ranging from the highly structured direct-instruction approach to the open classroom child-initiated approach adapted from the British Infant School model. Some of the program models described here are currently being implemented as part of the Head Start Planned Variation study.

For ease of comparison, the program formats are presented in terms of a two-dimensional schema developed by David Weikart.

As seen from the figure, the two axes represent the role of the teacher (vertical) and the role of the child (horizontal), with the extremes of each representing response activity on the one hand and initiating activity on the other. The four resulting quadrants provide a format for types of program based on that program's level of child and teacher response or initiating activity. For example, Programmed Curricula belong in the first quadrant because they call for teacher initiation or direction but response behavior on the part of the child. Several of the current array of preschool programs have been placed on this model according to their objectives and approach. Descriptions of these programs follow the figure.

FIGURE 1


Role of Teacher
initiates
Programmed Curricula
(transaction between teacher and child, child and material)
Academic Preschool
Behavioral approaches of Bushell
Juniper Gardens
Open Framework Curricula
(transaction between child and environment)
DARCEE
Ameliorative Program
Learning to Learn
Cognitively Oriented Curriculum
Institute for Developmental Studies
Role of Child:
responds
Role of Child:
initiates
Custodial Care
Child-Centered Curricula
(general development of whole child)
Bank Street
Responsive Program
New Nursery School
Responsive Environment Approach
Montessori
Tucson Early Education Model
Educational Development Center
Role of Teacher:
responds

Although the three types of child development curricula (programmed, open framework and child centered) may hold similar objectives, they present distinctive approaches to early childhood education. In addition to differences in initiating and response activity indicated on the model, they also differ in their focus on cognitive or affective skills, strategy or methodology and their basic theoretical assumptions. Within each of the three categories, some of the unique features of each approach are pointed out.

Descriptions of Programs

Programmed Curricula

Academic Preschool (Berieter-Engelmann, now Becker-Engelmann)

A structured approach which assumes that every child can achieve academically if he receives adequate instruction and if there is payoff for learning. Programmed materials for reading, arithmetic and language are rigidly prescribed; the teacher reinforces desirable behavior along specific lines.

Behavior Analysis (Bushell) Uses systematic reinforcement and programmed materials to teach needed skills. The teacher is a behavior modifier. Parents are part of the program, hired and trained to use positive reinforcement techniques and are also responsible for teaching these techniques to other parents.

Open Framework Curricula

DARCEE, Demonstration and Research Center for Early Education, George Peabody College (Susan Gray)

A program centered around two broad classes of variables: (1) attitudes relating to school-type achievement; and (2) aptitudes relating to

such achievement. To promote attitudes relating to school success, the program provides experiences to develop achievement motivation, persistence, delay in gratification, interest in school type activities, and identification with achieving role models. Objectives are: (1) promote attitudes to achieve, (2) experiences in perceptual development, (3) concept formation, and (4) language development. A home-visitor program with weekly contacts of 45 minutes, is included as a supplement to classroom.

Ameliorative Program (Karnes) A structured approach using behavioral objectives and criterion referenced tasks, giving emphasis to individual child. The goals of program include: (1) enhancement of cognitive development, particularly language; (2) development of motivation conducive to learning; (3) acquisition of effective information-processing skills; (4) development of a positive self-concept; (5) enhancement of social and emotional development; (6) promotion of motor skill development; (7) parent participation; and (8) enhancement of staff competencies.

Learning to Learn (Sprigle). A sequential program of guided learning experiences based on motor, perceptual and symbolic developmental tasks. Objectives include: (1) stimulation of intellectual development, (2) reduction of the complexities of problem solving, reasoning by classification and association, concept and symbol formation, spatial relationships, decision making, and an understanding of numbers by means of games; (3) replacement of the expository method of teaching by establishing a game atmosphere; (4) development of

motivation and appropriate attitudes; and (5) development of coping behavior.

Cognitively Oriented Curriculum (Weikart) Derived from theories of Piaget, the program has three foci: (1) the cognitively oriented curriculum; (2) the teacher; and (3) the home, where teacher works with mother to promote cognitive development of the child. Objectives are language training and development of self concept; learning objectives stated as behavioral goals.

Institute for Developmental Studies (Deutsch). This program focuses on both cognitive and affective development, working in areas of concept formation, perception, language, self-image and social - emotional growth. The program has five basic elements: curriculum development, training of teaching and supervisory personnel, demonstration, evaluation and research. Community and parent participation are emphasized.

Child-Centered Curricula

Bank Street Early Childhood Center. A developmental approach to enable the child to become deeply involved and self-directed in his learning, in both individual and group activities. The child is free in the classroom to investigate and explore through concrete, sensory and motor activities interrelated with opportunities for functional and expressive use of language. The key elements include: (1) staff development; (2) parent involvement; and (3) community relations.

Responsive Model (Nimnicht) and New Nursery School. Uses discovery approach with activities intended to be intrinsically motivating and self-rewarding. The objective is for the child to develop both a

positive self-image and intellectual ability. Emphasis is given to increasing the child's sensory and perceptual acuity, language development and concept formation, problem solving and abstract thinking ability. The total environment is organized to be responsive to the child. An environment is responsive if: (1) it permits the learner to explore freely; (2) it informs the learner immediately about consequences of his actions; (3) it is self-pacing; (4) it permits the learner to make full use of his capacity for discovering relations of various kinds; and (5) its structure is such that the learner is likely to make a series of interconnected discoveries about the physical, cultural and social world.

Responsive Environment Center (REC) Uses specially designed learning materials and educational technology, such as the talking page, self-correcting materials and the talking typewriter. The teacher selects and guides activities based on observation of the child's interaction with the environment, with emphasis on independent work rather than group instruction. Balance is provided between structured and non-structured activities. A home learning unit is available to parents.

Montessori. Emphasizes learning as contributing to child's competence and sense of ability manage routines of life. Montessori is a structured approach which deemphasizes social and emotional development. Through opportunity for the child to find experiences which match his own particular interests and stage of development, his spontaneous

453-405 O - 72 - 4

interest in learning is hopefully tapped. By placing children three to six years of age together, the program takes advantage of older children serving as models for younger children.

Tucson Early Education Model. The program emphasizes development of behavioral skills and attitudes categorized as: language competence, intellectual base, motivational base, and societal arts and skills. A flexible curriculum is provided, along with opportunity for frequent small group and one-to-one interaction. Imitation of desirable behavioral models is encouraged; social reinforcement is given for behavior and skill acquisition. Assumes that (1) the child does not have to be forced, or even requested to learn, and (2) optimal functioning of instructional program depends on effective parent involvement.

Educational Development Center(EDC). Objectives are: (1) to help fashion classroom environments responsive to the individual needs of children as well as to the talents and styles of teachers and (2) to develop the advisory concept as a way of facilitating continued growth and change in schools. Class activities arise from needs and interests of the group rather than from a prescribed curriculum; the teacher serves as a catalyst.

Choice of a particular approach depends on one's view of development and education and, of course, the children with whom one is working. Those who emphasize the need for children to acquire cognitive skills, for example, would select the programmed, direct instruction or behavioral models, which emphasize development of preacademic skills, such as number and letter recognition, reading, writing and

language. Those who would focus on education of the whole child, on the other hand, might encourage such experiences as free exploration and self-expression to increase the child's sense of self-worth, trust of adults and of the world, and respect for others.

Television as a Program Approach

Children's Television Workshop (Sesame Street)

Sesame Street, according to its developers, was designed to "gain as a regular audience the optimum number of America's 12 million children between the ages of three and five, and to teach them the beginnings of language, reading, numerical skills; reasoning and problem solving; an awareness of self and the world around, and social, moral, and affective development." In the cognitive area, at least, positive learning gains were achieved and "The Educational Testing Service report card tended to uphold the hoped for universality of Sesame Street in this area. Without discrimination, disadvantaged inner-city children, isolated rural children, black children, white children, all benefitted measurably." (Children's Television Workshop, 24: December, 1970)

Although it provides useful educational experiences for the children who watch it, Sesame Street cannot be considered an alternative to other early childhood education programs. For one, used alone, it lacks the socialization opportunity and sustained adult contact of group centered approaches. Used with other preschool approaches, however, whether in day care facilities or in the home, it holds great promise as a substantively sound and economical supplement.

National Instructional Television Center (Ripples)

Ripples is a series for young children (approximately kindergarten to second grade) that deals primarily with human values, feelings and needs.

Successful results in meeting objectives have been obtained by most of the foregoing approaches. To assume that just any preschool experience is beneficial, however, seems at present to be false (Palmer, Judith, 1966, p.12). For example, day care programs without planned educational components may not be beneficial. For this reason, Federal Interagency Day Care Standards specify requirements for educational services, as follows:

> "(a) Educational opportunities must be provided for every child. Such opportunities should be appropriate to the child's age regardless of the type of facility in which he is enrolled; i.e., family day care home, group day care home or day care center.
> (b) Educational activities must be under the supervision and direction of a staff member trained or experienced in child growth and development. Such supervision may be provided from a central point for day care homes.
> (c) The persons providing direct care for children in the facility must have had training or demonstrated ability in working with children.
> (d) Each facility must have toys, games, equipment and material, books, etc., for educational development and creative expression appropriate to the particular type of facility and age level of the children.
> (e) The daily activities for each child in the facility must be designed to influence a positive concept of self and motivation and to enhance his social, cognitive and communication skills."
>
> (Senate Finance Committee, June 16, 1971, p.153)

Diagnostic Centers or Services

To provide for an optimal match between the child and the preschool program, as well as to provide comprehensive services for the child and his family, diagnostic service centers have been proposed. One plan (Allen, 154) would make the service

available in each school district as follows: at age 2 1/2, the child would be brought to a Central Diagnostic Center by his parents or guardian. The purpose of the Center would be to learn everything about the child and his background for design of a plan and individualized learning program for him. This would include educational and medical diagnosis, and home visits by a trained paraprofessional, who would become the family's counselor. After completion of various tests, the Center would counsel with parents to arrive jointly at a preschool experience ideally suited to the child's needs. Medical referral and treatment would be arranged for and nutritional deficiencies corrected. Continuing evaluations would be made until the child reached the age of six, with alterations depending on the child's progress. Parents would, of course, be consulted at all times.

PROGRAMS FOR PARENTS AND POTENTIAL PARENTS

In addition to the preceding models and approaches for children of three to five, a variety of programs for parent education has evolved in recognition of three factors: (1) preschool education should be a supplement to, not a substitute for, parents' roles in educating young children; (2) the period before planned group education experiences away from home, i.e., birth to three or four, is crucial in the child's development, and that parents have full responsibility for their child's education during this period; and (3) the need for developmental child care services for working mothers must be met.

The concept of parent education is based on the belief that early childhood learning does not occur only in a group situation and that handsome gains can be made economically by maximizing the home as a learning environment and the ability of parents as teachers. Its aim is to attempt to prevent developmental deficits from occurring, both before and after infants are born, by training parents to provide the kinds of activities that children

of this age require for adequate development and to provide for other than educational services where needed as well. There is considerable evidence that efforts to improve parent knowledge about child development and skills in applying the principles and techniques to their own children have positive impact at relatively little cost, particularly in preventing intellectual, emotional and social deficits.

Quotes from a column in the Philadelphia Bulletin of September 8, 1968, captioned "How To Make Home Baby's Learning Lab" express the feeling of many specialists about the potential of the infant years for development:

> Says Minnie Berson, formerly with the Office of Education, "There is no longer any question that the very youngest of infants are open to learning...After all, they have to learn to survive."
>
> Senior psychologist William O. Jenkins of New York's Institute for Child Development and Experimental Education notes that youngsters achieve the remarkable feat of using sounds in a recognizable language by the time they are 2--and do it solely by imitating sounds and other clues in the world around them. "The way I like to put it," Jenkins concludes, "is that learning starts at conception; education starts at birth."

Some research substantiates the value of very early stimulation and learning. Earl Schaefer, for example, has found the emergence of differences in mean mental test scores among different social groups during the period of early verbal development: the second year of life. (Schaefer, Earl, Ch. 5 in Education of the Infant and Young Child, 1970). In his longitudinal effort, Burton White is studying the development of "overall competence in children who have gotten off to a superb start in their early years" toward the goal of "optimizing human development rather than merely removing developmental deficits." (White, Burton L., Director of Preschool Project, Graduate School of Education, Harvard University, in letter of June 25, 1971 to Education and Public Affairs, accompanied by a 1971 pre-draft article (146) to appear in Interchange). Jerome Kagan also finds the first three years critical in determining or predicting later child and adult

behavior. (Gordon, Ira, 48: 1970, p.4)

A model program for infants and very young children has been implemented by Ira Gordon, Director of the Institute for Development of Human Resources, University of Florida. In a letter to Education and Public Affairs, he states:

> "My research would indicate that a 'formal' program, that is 'planned' should begin by three months of age and should most likely take piace through some form of home visit activity...a longitudinal program begun early might have more chance of lasting effect than a short term one (one or two years) begun around age 3 or 4. Such a planned program should not be limited to disadvantaged or ethnic populations...Although these may be, for a short run, the primary targets,...there are a great many young mothers who are technically 'middle-class' who lack the former folklore skill and may even lack the understanding to provide a maximally educationally stimulating environment for their children which strengthens both their intellectual development and the affective development of the child."

The value of training parents to teach has been supported in a number of studies. One innovative program, for example, has shown that "mothers of poverty on Aid to Families with Dependent Children can be taught to be effective teachers of their own preschool children." (Hunt, J. Mc Vicker, American Journal of Orthopsychiatry, Jan. 1971) When properly equipped with skills, confidence, attitudes and sometimes materials, parents can serve a number of valuable functions in the development of their children. They can show, tell and listen for their children and, as suggested by Earl Schaefer, establish the home as a "learning center". In one research program, for example, Merle Karnes and associates at the University of Illinois demonstrated that children of mothers given training as teachers achieved greater intellectual mean gains than children of mothers not receiving the same training. Bettye M. Caldwell states "that optimal learning environment for the young child a) exists when a young child is cared for in his own home, b) in the context of a warm and nurturant emotional relatiohship, c) with his mother (or a reasonable facsimile thereof) under conditions of varied cognitive and sensory input." (Caldwell, Bettye M. American Journal of Orthopsychiatry, Jan.1967, p.19)

Parents very often lack training in the basic essentials of physical and psychological care for their children or the sensitivities requisite to carrying out their "parent as teacher" roles. In fact, the parent finds himself caught in a web of partial knowledge, bombarded by living advertisements, by the enticements of television, by well-publicized books, by a frightening new sense of the importance of early childhood. (Hymes, James, The PTA Magazine, Sept.1968, p.12) He is certainly unaware of the operational steps required for preparation of children to use optimally the learning opportunities open to them. (Tamminen, Armas, et.al., 1967, p. 6)

Yet Gordon demonstrates that at least substantial portions of poor parents can be taught to be effective teachers of their young, when given models to imitate, when models' actions are explained, and when home visitors bring new ways of child rearing into the home. (Hunt, J. McVicker, Harvard Educational Review, Spring, 1969, p.294) And parents are interested, according to Virginia Klaus, Coordinator of Early Education Projects at Prince Georges (Maryland) Public Schools. Working with 50 families which included one hundred children below school age, she found that "most mothers welcome the opportunity to get advice on child rearing and to share their concerns about their children"

Parent Involved Programs

Bettye Caldwell has described programs that are concerned in one way or another with cognitive enrichment of infants and young children as omnibus models, parent-oriented models and child-oriented models, or combinations of these. Omnibus programs are directed simultaneously to both the infants and the parents; they are comprehensive in their inclusion of health and social service components. Parent-oriented programs provide tutorial or group experience for parents "with the clear intent of having this effort produce an impact on the child by virtue of changed behavior of the parents." Child-oriented programs focus their

enrichment activities almost solely on the child. "The parent may or may not observe and may or may not be expected to carry out any continuing activities with the child. It is probably accurate to state that in all operational programs the key activities represent slight variations in emphasis rather than exclusive patterns of action..." (Caldwell, Bettye M. in Herbert Rie, ed., 1970, p. 17)

In these programs, parents may come to school for regular sessions with a "teacher"; teachers visit the home on a regular basis to observe and offer guidance to the parents; book- or toy-lending libraries may be established; babysitting or transportation costs for parents to attend meetings may be paid; and in some cases, nutrition, health and other social services may be provided.

Some of the parent education programs reporting positive results from research and demonstration, include the Children's Center at Syracuse, New York (Caldwell and Richmond), Infant Education Research Project (Schaefer), Parent Education Program at Gainesville, Florida (Gordon), Child Care Project of the Yale Child Study Center at Providence, Rhode Island, Child Care Project of the University of North Carolina at Greensboro (Keister), Mother-Child Home Program at Freeport, New York (Levenstein), Structured Tutorial Program at Champaign, Illinois (Painter, Karnes) and the Harlem Research Center of the City University of New York (Palmer).

Parent-Child Centers

Begun in the fall of 1968 and now sponsored by the Office of Child Development, Department of Health, Education and Welfare, Parent-Child Centers (PCC) emphasize the family as the agency to be served. Planned to provide comprehensive services, they include health care for the child and other family members, prenatal education of the mother, a program of stimulation in infancy, day care, and an education

program for the parents in child development, family management, job skills development and husband-wife relationships. The PCC program also includes social services to the entire family and suggests programs to involve family members in participation in neighborhood and community. The objectives of the Parent-Child Centers are:

1. Overcoming deficits in health, intellectual, social and emotional development and maximizing the child's inherent talents and potentialities;
2. Improving the skills, confidence, attitudes and motivations of the parents as citizens, parents, and individuals;
3. Strengthening family organization and functioning by involving the youngest children, the parents, older children in the family, and relatives;
4. Encouraging a greater sense of community and neighborliness among the families served by the center;
5. Providing training and experience for both professionals and nonprofessionals who may then be employed to work with parents and children;
6. Serving as a locus for research and evaluation of progress toward the objectives stated above.

Other Approaches

Parent education programs, in addition to the approaches given above, can be conducted in a number of ways, such as by use of neighborhood mobile units, through television programs aimed at parents and by involvement of parents as staff in the actual preschool program.

The Office of Child Development, administrator of the Head Start program, is also currently investigating other possibilities in the spectrum of programs for parents with the objective of launching in the near future a national program around the projected title of Home Start.

Pre-Parent Education

Another approach to parent education--aimed at mazimizing future parent skills--is one of providing adolescents the opportunity to learn about child rearing and the development of children through first-hand experience.

" Just as business education students need typewriters to practice on; just as chemistry students need their labs; just as driver education requires a high school to have automobiles, we need such nursery schools in every high school so students--boys as well as girls--can have the chance to work with children, to observe and study them, to find out what makes them tick. The most obvious fact in the world is that high schoolers are headed toward family life. Studying children--with the nursery school as the lab--ought to be an integral part of every high school curriculum.

Right now, without waiting any longer, we ought to have at least one public nursery school (or day care center) in every high school in America to help our adolescent boys and girls get ready for family life."
(Hymes, James L., Jr., 1968)

We endorse the widespread introduction of practical pre-parent programs at the secondary school and college levels. In addition to teaching adolescents about family life, programs of this nature offer the benefit of providing at least one classroom of preschoolers (15-20 children) in every school; thus they may become a source of great potential for helping to meet the need for services to young children.

As a concluding note on the role of parents, the following paragraph from a review of research on cognitive development in the early years is worth quoting:

" The argument for parental involvement in the education program is simple and important. The parents are with the children the greater proportion of their lives and cognitive development is a function of the totality of the actions in which the children are engaged. There can be no division of the day for the child along educational (work) and non-educational (leisure) dimensions such as we pretend to have for school age children and for adults. The preschool child is not attuned to education while his tutor is in his home or while he is in the day care center and then preoccupied with living at other times. He is always in the process of experimentation and growth. The only way to truly affect his cognitive development, thus, is to be fostering it always."

(Lichtenberg, Philip and Norton, Dolores, November 1970, p.88)

HISTORICAL DEVELOPMENT AND STRUCTURAL ARRANGEMENTS FOR EARLY CHILDHOOD EDUCATION IN THE UNITED STATES

Although group communal care of children has been a feature of many societies in which the mother was required to share in the work of the community, the notion of a formalized program of education of young children derives from the writings of John Amos Comenius, a seventeenth century Moravian educator who proposed a "School of Infancy" until the age of six with mother as teacher, which experience would lay the foundation for his later life and prepare him for a pleasant experience in school.

> "Whatever can be devised to excite in them a love of school ought not to be omitted. Similarly the child should be made to feel that the new teacher is a friend of the parents, and therefore of the child, for when to children the school becomes an amusement, they will make proficiency with delight."
> (Boultwood, M.E.A. and Curtis, S., 1966, p. 205).

Child care and early childhood education now take place in a number of settings and types of programs--kindergartens, Head Start, nursery school and comprehensive day care--each of which has produced significant gains in children's performance and each offering potential for large-scale programming for children.

It must be pointed out that the division and separation of types of structural arrangements as described in this section is somewhat arbitrary. While in actual operation, many of the programs share characteristics in common, the reader may be interested in those aspects which differentiate them from one another.

Kindergarten

Kindergartens trace their beginnings to Friedrich Froebel who in 1837 started the

first group in Blankenburg, Germany. Froebel believed that without guidance, children's activity would be likely to degenerate into aimless play instead of assisting their development.

America's first kindergarten is attributed to Mrs. Carl Schurz who in 1856 established a means of serving German-speaking children in Watertown, Wisconsin. The first kindergarten for English-speaking children was opened by Elizabeth Palmer Peabody in Boston in 1860. The school was private; Boston founded its first public kindergarten in 1870, but it was soon closed and another did not reopen until 1887. During the early years, kindergartens served primarily two groups: the wealthy and the poor immigrants, large numbers of whom were arriving in the United States at that time. These kindergartens were supported by tuition fees and by gifts from philanthropists. Kindergartens became a regular part of the public schools in St. Louis in 1873. By 1880, there were 400 kindergartens in over 30 states. (NEA Research Division, 1969, p. 6) Concurrent with this development of public school kindergartens was their access by children of all economic and social levels. This was followed by establishment of teacher training schools and kindergarten associations, as well as the appearance of publications to disseminate information and to stimulate interest in kindergarten education.

As of 1970, three million children were enrolled in kindergarten in the U.S., both public and private. According to the Education Commission of the States, there are:

36 states which have adopted legislation permitting kindergarten programs;
8 states which mandate it; and
38 states which make state aid available.

The trend has clearly been toward continuous growth of enrollment and gradual development of the expectation of kindergarten education for all children.

Kindergarten programs differ widely in nature and financial support. Because state

aid varies, kindergartens vary from half-day programs for children to full-day double-load programs for teachers to full-day programs. Hawaii, for example, inaugurated full-day kindergarten in 1945. Since 1955, full-day kindergarten has been an integral part of all elementary and secondary schools in that state. (Gorton, Harry and Robinson, Richard, Education, March 1969, p.220) Classes vary in size from 15-20 children to as many as 35-40; staff may consist of as many as 3-4 adults to as few as one teacher. And, lastly, program content and style vary greatly--from the notion of kindergarten as a pre-first grade, highly regimented, academic year to the idea of kindergarten as a program year of pleasant, happy and free experience for children and teachers alike.

If kindergarten is not just a pre-first grade year, if its aim is not simply preparation for the academic experiences of elementary school, then what are the objectives of kindergarten? As stated by a sample of kindergarten teachers in response to a questionnaire, the purpose and value of kindergarten include:

Social development--getting along with others, courtesy, consideration, sharing

Mental alertness, curiosity, creative thinking and inquiry

Physical coordination

Language development--vocabulary, expression, listening, following directions

Discovering oneself as an individual, self-reliance, self-confidence, self-control

Reading readiness

Work habits--following instructions, finishing projects

Assuming responsibility--dependability

Arithmetic readiness

Health habits

(Burgess, Evangeline, 1965, pp.6-7).

Head Start

Establishment of a preschool program, Head Start, as part of the Office of Economic Opportunity's war on poverty, was announced in President Johnson's education message on January 12, 1965. In just a few short months, a large-scale nationwide summer preschool program was launched.

The program was to be largely experimental; its aim was to help to prepare impoverished preschool children for primary school experience: four year olds if school begins with kindergarten or five year olds if school begins with first grade. Head Start was not conceived solely as an educational program; it was comprehensively viewed as

> "committed to the development of the whole child--to his intellectual growth and to his physical well being and to his emothional health and to his sound social development. Head Start is committed to the developemt of the whole child and to the well being of the family from which the child comes and to the development of strength in the community in which that family has its roots."
> (Hymes, James, 1968, p. 9.)

Begun as a temporary summer effort, it was not until late summer of 1965 that Head Start was expanded into a year-round program. In 1965, its first year of operation, 560,000 children were enrolled in summer Head Start and 20,000 in full-year programs at a total cost of $103 million. In 1970 (FY 1971), summer enrollment was 209,000 and year long enrollment was 263,000 at a total cost of $325 million. The emphasis has been gradually to convert summer programs into full-year programs because of their obviously greater benefits for children.

Subsequent to publication of research findings which indicated that the gains made in the Head Start program were often not sustained in the public schools, the Office of Economic Opportunity launched a Follow Through program. Now

administered through the Office of Education, the program provides a comprehensive Head Start-type program for children through the third grade.

Head Start and Kindergarten Compared

Both Head Start and kindergarten are developmental or educational classroom programs offered three to four hours per day. Generally, kindergartens are part of the local school system designed to serve five year olds who will be entering public school (first grade) the following year. In those communities which have no public kindergarten, Head Start includes five year olds, in addition to children of younger age. In spite of basic similarities in content and operation, there are important differences between Head Start and kindergarten. 1) Head Start serves primarily the disadvantaged or low-income population; kindergarten, where it is available, is for all children. 2) As mentioned above, kindergarten is part of the public school system; Head Start may be run by schools or by any community agency. 3)Head Start also encourages the use of paraprofessional teachers as well as aides, assistants and volunteers in the classroom, particularly parents of children in the program. 4) Head Start is more comprehensive than kindergarten, offering in addition to its educational program, social, psychological, nutritional and health services to children and their parents. Kindergarten is basically only an educational program. 5) Head Start maintains a high adult-child ratio, one adult for every five children in the classroom. Kindergarten adult-child ratios are considerably lower. 6) Along with its innovative facets, there has been more research on Head Start than on kindergarten; as a result, much more is known about the content, process and outcomes of Head Start programs.

453-405 O - 72 - 5

Nursery School

Although nursery school has traditionally been viewed as a service to middle-class families, its beginnings in the early part of this century found it serving the needs of disadvantaged families, primarily focusing on the health and welfare of the children served. During the 1940's, however,as a shift in social identification occurred, the goals of the nursery school also changed toward social and personality development and, because it was no longer necessary with this socioeconomic group, away from the physical welfare of children. The nursery school is typically planned for three and four year old children, in contrast with Head Start and kindergarten programs which focus basically on five year olds.

The first nursery schools in this country appeared in 1918 and 1919, receiving their impetus from a number of universities and colleges--The Nursery Training School of Boston (now part of Tufts University), Harriet Johnson Nursery School in New York City (now part of Bank Street College of Education) and the Merrill-Palmer Institute in Detroit--where they were organized for the purpose of studying normal development of children.

Almost all nursery education has remained essentially a private venture, explaining why today it is primarily available to middle-class families:

> " There really are not public nursery schools anywhere in America. The closest you can come to an exception to this blanket statement are those few schools run by adult education as a part of their parent education programs--California has many of these--and those few schools run by high schools as a part of their pre-parental education program. "
>
> (Hymes, James, 1968, p.30).

In a comprehensive review of the literature, Sears and Dowley summarized

objectives of nursery school education as they had been described by various groups:

1. Meeting organic needs and establishing routine habits: eating, elimination, sleeping, washing, dressing, undressing.

2. Learning motor skills and confidence: climbing, running, jumping, balancing, learning to use the body effectively.

3. Developing manipulatory skills: using scissors, crayons, paste, paint, clay, dough, building with blocks, working with puzzles, beads, tying, buttoning.

4. Learning control and restraint: listening to stories, sitting still, reacting to music.

5. Developing appropriate behavior: independence-dependence in adult-child relations; coping with fear, angry feelings, guilt; developing happy qualities, fun, humor, healthy optimism.

6. Psychosexual development: identification, sex-role learning, formation of conscience.

7. Language development.

8. Intellectual development: cognitive learning, concept formation, self-understanding and self-esteem, creativity, academic subject matter.

(Burgess, E., 1965, pp. 8-9).

Types of nursery school programs include: (NEA Research Division, 1968, pp.7-8).

Parent-Cooperative Nursery School--This type of nursery school is sponsored and administered as a non-profit enterprise by a group of parents organized and incorporated for this purpose. Parents find suitable facilities, plan the budget, hire the staff, recruit members, obtain equipment, and assist with the operation of the school. The expenses are met by tuition fees. Parents and teachers together determine school policies. Parents meet with the teacher and other professional consultants for discussion of problems.

"Parents in co-ops come to understand their own children better. They come to understand the process of education better...A great deal of parent 'education' goes on." (Hymes, James, 1968, p.32). The idea of parent involvement in Head Start derives

from the concept of parent cooperatives.

Laboratory Nursery School--

The laboratory nursery school is usually established and operated by those departments in a college or university which provide for child study, experimentation, and demonstration pertaining to young children. They serve primarily as demonstration centers and laboratories for students preparing to teach in the field of early childhood development and as a source of subjects for researchers studying development. Expenses may be shared by sponsoring departments, supplemented by fees or by research grants.

Parochial or Church-Sponsored Nursery School--This nursery school functions as part of the educational service of a church. The goals and policies are determined by the church. Directors and teachers tend to be active in teachers' organizations and trained to teach young children.

Nursery School for Exceptional Children--These nursery schools are designed for children who are blind, deaf, crippled, mentally handicapped, or speech impaired. They include both public and private, and both day and residential schools. Some schools are operated by hospitals, clinics, and other institutions, often in conjunction with a local public school system. These schools primarily serve the needs of children and their parents but may also serve educational and research functions in the sponsoring organization.

Play Schools are another kind of nursery school program, whose philosophy revolves around the concept that play is learning; play activities are often planned to insure learning. A play school program provides social activities through group-centered play programs for children. Play schools are often organized by a group of parents.

Day Care

In contrast with the perception of nursery schools as private, middle-class institutions,

day care has historically been considered a service for children of poor families and has been either publicly or philanthropically supported.

One of the early programs concerned with the welfare of poor children was developed by Maria Montessori in Italy in the early part of this century. Interestingly enough when transferred to this country, the Montessori movement became essentially another approach used by middle-class nursery schools.

Historically, public day care services in this country date back to the Civil War, when the need for manpower to produce war materiel was supplied by women who left their children in public facilities while they worked. Once the War ended, however, these centers closed. The following chart lists some of the major Federal interventions which have stimulated growth in child care in this century.

1935 Farm Security Administration (day care for children of migratory workers)
1935 Social Security Act, Title V
1936 Works Progess Administration (day care component)
1937 Federal Housing Administration (loans to communities for day care)
1941 Lanham (Community Facilities) Act (day care facilities for up to 1.6 million children during World War II; administered by Children's Bureau and Office of Education; less focus on education, more on custodial care; California only state still operating day care centers centers started under this Act)
1962 Social Security Act, Title IVB
1965 Head Start
1965 Elementary and Secondary Education Act, Titles I and III
1965 Education Professions Development Act
1967 Social Security Act, Title IVB (child welfare services)
1967 Work Incentive Program (W I N) (day care to help mothers get training and jobs)
1967 Follow Through
1968 School Lunch Act (provided funds for food and equipment for day care to non-profit service child centers)
1969 CEP (concentrated employment programs, including funds for day care)
1969 Parent-Child Centers
1969 Planned Variation (Head Start evaluation research)
1969 Taft-Hartley Labor Management Relations Act (amended to enable unions to bargain with employers for contributions to trust funds for establishment of day care centers for preschoolers (AVCO, KLH) (Miller, Joyce, Child Welfare, January 1971, p. 38)
1970 Sesame Street (federal and private funds for a children's education television program).
1971 Various bills under consideration in the 92nd Congress are discussed later.

Day care has generally been designed to meet the needs of the working mother. As a result emphasis in the past has been primarily custodial in nature, rather than educational. Because many day care centers were directed by child welfare rather than educational specialists, welfare objectives have, at least until recently, tended to prevail (Cogden, Courtney in Bloom, B., et al., 1971 c, p. 350) (Even custodial care, however, can include stimulating activity; there is no reason why it cannot also provide sound educational programs.) Day care facilities may be publicly or privately administered; and their services may be offered in day care centers, home centers or family day care centers.

Day Care Centers. According to Federal Interagency Day Care Standards, day care centers provide care for groups of 12 or more children generally aged three to six, with a child-adult ratio ranging from 5 to 1 to 7 to 1. The staff ordinarily consists of an adult together with sufficient number of assistants and volunteers to maintain the child-adult ratio required. Some centers also provide before- and after-school care for school-age children. Child care centers may be either proprietary or non-proprietary. Proprietary facilities, including the recently developed day care franchises, operate for profit, and therefore must charge tuition, making them most often used by families with relatively higher incomes. Non-proprietary centers include church or community - sponsored, industry-operated day care for employees, union operated centers for members' children, centers for federal employees, centers operated by hospitals, and child care facilities funded by federal assistance, such as Head Start, WIN, AFDC, and others.

Family Day Care Homes. According to Federal Interagency Day Care Standards again, this type of care serves only as many children as the natural setting of the home can accommodate. It is especially suitable for infants and toddlers in a

neighborhood program and may include after-school care. A family day care home may serve no more than six children, five if the age range is infancy to six.

Nursery, Head Start and Kindergarten programs generally operate from three to four hours per day during the school year. Day care children, especially to meet the needs of working mothers, may attend all day, every working day of the year. This time element makes a marked difference to the children and to the adults who teach and work in the centers. For these and other reasons, the pacing and variety of activities must also differ from other pre-primary programs.

Coordination of Public Day Care Services

Given the large number and variety of federal programs for children under six, the problem of coordination has confronted states and communities in using them. The Appalachian Regional Commission lists over 300 titles in federal legislation administered by 18 different federal departments. The 4-C (Community Coordinated Child Care) Program of the Office of Child Development, as its name implies, focuses on coordination of children's programs, but many problems still exist at the state and local levels in attempting to implement programs using federal funds.

Popular and Professional Support for Early Childhood Education

A number of recent events has stimulated immense activity in the field of early childhood education. In the past decade, the civil rights movement, women's liberation, increase in maternal employment, the war on poverty, the President's education message of March 3, 1970, and the White House Conference on Children have directed nationwide attention to the significance of development prior to the

age of six, and particularly, to its implications for later school success. A large number of professional organizations, foundations and local and state groups are applying serious and increasing resources and energies to early childhood development. Many of these are acknowledged in the foreword, but the list can easily be expanded by persons knowledgeable about progress in this field.

Concurrent with increased interest in, and support for early childhood education, sizeable increases in enrollment of children under six in the various program arrangements described in this section are anticipated. (For current and projected enrollments, see section on Needs)

In spite of the increased enroilment, current facilities available for all forms of pre-kindergarten and kindergarten provide space for only about four million children (one million pre-kindergarten and three million kindergarten) However, the aim of professional organizations and government agencies is eventually to provide services for all children under the age of six. As early as 1950, the Council of Chief State School Officers recognized the responsibility of state departments of education for nursery schools as well as kindergarten programs. (Council of Chief State School Officers, 1961, p. 1).

According to a statement of the American Association of School Administrators, National Education Association, in 1966, "All children should have the opportunity to go to school at public expense beginning at the age of four."

And, in the words of the Committee for Economic Development in Education for the Urban Disadvantaged,

> "The decisive effect of early childhood experience on children's failure and success makes preschool for the disadvantaged a necessity. Only a massive effort to establish public and private preschool education programs will provide this preparation in motivation, intellectual capacities and physical skills essential to success in achieving total basic literacy. Government support for free day care centers providing preschool

education for children of working mothers should be continued and expanded."

The National Federation of Federal Employees has urged government to operate day care centers for children of federally employed mothers; currently there are day care facilities in the Department of Labor, in the Department of Health, Education and Welfare and in the Office of Education.

There will be increasing pressure for more instruction at the preschool level, not only by the poor but by the middle-class who send their children to private nursery schools. One sign of response to this demand may be seen in the action of three states--New York, California, and Massachusetts--to begin to incorporate preschool education into the public school system. (David Elkind, Childhood Education, Feb., 1969, p. 322).

Bills Concerned with Day Care or Child Development in the 92nd Congress

As a result of this public pressure, legislative action to provide further support of day care and/or early childhood education is very likely in the 92nd session of Congress. Among the possible bills that may be enacted into law are the following:

H.R. 1 (Mills, Family Assistance Plan) This bill would make child care available so that mothers can enter or continue in training, employment or vocational rehabilitation. Child care services for children (ages not defined) while the parent is participating in the program would be authorized. The Department of Health, Education and Welfare would provide the funds and set standards for child care. Grants for services could be made to any public or non-profit private agency; contracts could be made with any public or private organization. 100% Federal funds could be used for child care services for those in training, but the

Secretary of Labor may require individuals receiving child care services to pay all or part of costs when able to do so. The bill provides for training for paraprofessionals and others; grants for this purpose as well as for research, demonstration and evaluation can be made by the Secretary of HEW. H.R. 1 would increase tax deductions for child care to $750 (up to $1,125 if two dependents or $1,500 if three dependents.) The maximum income for a family taking the deduction is raised to $12,000

H.R. 6748 (Brademas-Dellenbach, et al., Comprehensive Child Development Act similar to S.2007 Mondale, Javits, Schweiker, Nelson, et al., Comprehensive Child Development Act of 1971)

This bill would establish and expand comprehensive child development programs and services to meet the needs of children, with emphasis on poor, preschool and children of working mothers and single parents. Non-poor parents would be subject to fees. The bill provides for a wide range of developmental programs, including day care, with special programs for Indians and migrants. It would serve children from birth to fourteen years of age. Local Policy Councils of parents are provided for; standards would be set by the Secretary of HEW. Prime sponsors (any state or unit of local government)could make grants, contracts or loans for provision of services. 100% Federal funds would be applied to Indian and migrant programs; 80% to economically disadvantaged (which can be raised to 100% by the Secretary of HEW). The bill would establish an Office of Child Development in HEW to administer the bill. It would arrange for professional and paraprofessional training, conduct evaluation, and provide technical assistance. Day care would be furnished

under Title IVA or B or under this bill.

S. 2003 (Long, Federal Child Care Corporation Act)

This bill expands availability of child care services primarily for welfare mothers who wish to undertake or continue employment. It would authorize a wide range of child care, including nursery schools, play groups, boarding and child development for an unspecified age range of children. The bill would create a Federal Child Care Corporation headed by a three-man board appointed by the President. The Corporation would be able to contract, operate, lease, advance funds, provide technical assistance, monitor and train. It would also establish a National Advisory Council on Child Development. Funds would come from a $500 million loan from the Treasury to initiate a revolving fund; revenue bonds ($250 million maximum) could be sold to finance construction; fees would be paid for child care services. The Corporation would establish standards. 100% Federal funds could be provided if a welfare agency refers for child care; a sliding fee scale would be established for others. The Board would set up an Office of Program Evaluation and Auditing. The bill would increase tax deductions for child care to $1,000 for one child or $1,500 for two or more children; maximum income for a family would be raised to $12,000.

Predictions as to passage of any of the foregoing bills in this session of Congress are uncertain. Probably some form of day care service will be legislated. Whether the program legislated is given the durability and stability it requires remains to be seen. H.R. 6748, for example, has been incorporated as an amendment to the Economic Opportunity Act.

Since the Economic Opportunity Act is being extended for only a two year period, (through FY 1973), the child care provisions are likely to suffer the political fortunes that have plagued the entire poverty program only a year after their introduction. Yet in terms of child development substance, this bill seems to offer most. H.R. 6748 at one time asked for an appropriation of $2, $4 and $7 billion for each of three successive years. It seems unlikely that such amounts would be approved at the outset; furthermore, since the bill provides services for children to age 14, only a portion of the appropriation would be used for preschool programs.

It is the consensus of persons closest to national policy that the time has come for child care and early childhood education programs national in scope. The trend is clear. Only the precise timing and the form or forms the national effort will take and the level of funding are uncertain at this time.

'71

EVALUATIVE RESEARCH ON EARLY CHILDHOOD EDUCATION

As research on early childhood development has expanded at laboratories and learning centers across the country, evaluative studies built into operating or demonstration programs have also been conducted to ascertain the effects of one or another variation of intervention. It is largely from these studies that objective support is found for a broader application of programs for the very young.

Problems in Conducting Evaluative Research

The critical reader will not be deceived that the design and conduct of research and evaluation studies in education is an easy task. Some of the difficulties that have confronted these efforts in early childhood education have been:

--Inadequate qualitative /quantitative definition of the aims or objectives of the educational program. Choice of theoretical formulation, a specific program approach or an individually tailored program stems from a decision as to the purposes to be achieved: What type of learning, under what conditions, for what educational goals? (Weber, Evelyn, 1970, p.31). Among the objectives for early childhood education cited in the literature are the following:

..To offset deficiencies that cause school failure; to overcome the deficits of the disadvantaged

..To stimulate healthy growth, develop individual abilities

..To enhance intellectual, social, emotional and physical development

..To detect and prevent future problems for the 10% to 15% who may be physically or emotionally handicapped

..To assist the child in developing the ability to use his perceptual, pre-verbal abilities

..To assist in language development; reading

..To increase the IQ

..To develop motivation to learn

..To increase cognitive competence

..To advance self concept, ego development; interpersonal style; emotional stability; social awareness; sense of responsibility

No comment is required as to the desirability of reaching any or all of the foregoing inventory of objectives. Suffice it to say that program objectives and means of assessing their achievement must be formulated and specified as to outcome.

--In attempting to improve later school success, not enough emphasis is placed on the quality of the elementary school program as an influence on the academic outcome of the student, apart from the preschool intervention. (Frazier, A.,ed., 1968, p. 38)

--Measures used to assess change are weak in terms of their reliability or appropriateness to the change to be measured. Though developed for individual diagnostic purposes, they sometimes are used for program measurement purposes. Often the measures assess less significant concerns of the education program, simply because they can be measured more objectively or more easily.

--The duration of the preschool intervention has been too brief realistically to expect to achieve the outcomes desired. Head Start, for example, began as a half-day, summer program; experience demonstrated a need to expand it to a full-day, year round program for some; and then into a Follow Through program extending through grade three. Erasing deficits of long standing has not

been accomplished with short bursts of effort. The evaluation strategy must similarly be longitudinal in nature; since the Head Start program is only six years old, it must be recognized that the program is still evolving.

--While the effects of external, uncontrolled variables on children in the studies are recognized, the real weight of these has not been measured. Many other factors affect educational success, including influences at home, physical well-being, and motivation. Preschools cannot be expected to solve all problems of the ghettos. (Spodek, B., NEA Journal, Feb. 1968, p. 46)

--The multiple programs which have been mounted do not lend themselves to comparative evaluation because each has unique goals, collects different data, uses samples of varying composition or different adult-child ratios, or applies different strategies to achieve similar ends. This difficulty is often compounded by evangelistic belief that the investigator's one program or method should be "best" for all children and teachers in spite of increasing evidence that individual differences in young children are significant. (Elliott, David and Kamii, Constance, Educational Leadership, May 1971, p. 827) As expressed by Caldwell:

> " The need for more program description cannot be stressed sufficiently. What kind of intervention produces positive effects? What kind of intervention, what kind of effect or, still better, what kind of intervention produces what kind of effect in what kind of child? These are questions which need answers. Until detailed, naturalistic descriptions of minute to minute, person to person, and person to object classroom transactions are available, nothing can be concluded about the effectiveness or even the existence of different curricula."
> (Caldwell, Bettye M. Exceptional Children, S' 1970)

--Research designs frequently suffer in that they tend to (a) overlook the multi-disciplinary character of the field in which they are being applied; (b) do not provide for longitudinal follow-up; (c) fail to incorporate control groups; and (d) very often do not examine the child in his complexity, but rather reduce him to fit currently available objective methods of measurement. (Kessen, William, "The Near Future of Research with Young Children"; Grotberg, Edith, ed., 1971, mimeo)

--Large scale strategies for research in which the relative values of various approaches, administered under standard conditions, have not, with the exception of "Planned Variation" for Head Start programs, been developed. Nor has there been adequate replication of what are essentially demonstration programs to test how effectively they work in a more typical operational setting.

--Research reports are often weak in identifying the populations on which their research is based. Annie L. Butler, Associate Professor of Early Childhood Education at the University of Indiana, writes in a letter of May 28, 1971:

> "If I may comment a little bit on our first report, one of the findings that came as somewhat of a surprise to us was that researchers have not been at all specific in identifying the populations of children upon which their research has been done. We analyzed the data according to whether it was based upon advantaged or disadvantaged children, Anglo or Negro children and five-year old or under-five-year old children. What we found was that great portions of the data are undesignated by the researchers as to the socioeconomic status, ethnicity and age and that where we do have designations we have a good deal of research on advantaged Anglo children and disadvantaged Negro children, creating a questionable basis for comparison. We also have a large volume of data on children ages three through five without any designations regarding the characteristics of specific ages of children. There is a larger volume of data in the cognitive domain than in the psychomotor domain. In fact, data in the psychomotor domain is very sparse or non-existent in some of our categories."

Although it is possible to be critical of much evaluative research as a result of the foregoing problems, the reader will recognize that social science research in general suffers from the same problems, where, because the work is most often accomplished in a natural or operational setting, it is not always possible to control all the relevant variables, to conduct longitudinal follow-up studies of acceptable duration, to obtain matched control samples, or to locate or develop measures which reliably or validly assess the desired outcomes of the program.

Nevertheless, the consistency of positive findings of change in the desired direction lend weight to the conclusion that early childhood programs are valuable to the child, especially when viewed against the backdrop of the multitude of studies completed. Below we point briefly to a series of selected studies which support this position.

Achieving improved later academic performance

--Irene Fast (1957) found that not only did kindergarten attendance facilitate academic performance in grade one, but that evidence of this facilitation could also be found as late as grade eleven. (in Mindess and Keliher, 1967)

--Preschool training groups gained significantly in academic potential during the training period. The total number of nonpromotions in kindergarten in the three schools involved dropped sharply from previous years. The subjects in the summer of 1965 were four year olds eligible and enrolled in Project Head Start in three Duluth schools in the lowest socioeconomic area of the city, schools which typically had had a disproportionately large number of children retained in kindergarten and first grade. (Tamminen, A., et al., 1967, p.32)

--In Washington, D. C., youngsters of kindergarten scored three times higher in

453-405 O - 72 - 6

the Metropolitan Readiness Test than did children who had not had the opportunity to attend kindergarten. Nonpromotion or failure beyond the first grade was greater for children who did not have the advantage of kindergarten. (Hill, John, 1967, pp.3-4)

--In the Banneker District Project in St. Louis, Missouri, "Operation Motivation", with students ranging from four months to four years, pupils reached the national norms for the first time in important tool subjects. (Fowler, William, HEW report, Nov., 1968, p.7)

--Of seven research studies reviewed by the New York State Department of Education comparing the academic performance or progression of pupils who had been in kindergarten with those who had not, all seven favored the group which had the kindergarten experience. (Bureau of Child Development and Parent Education, 17: 1968).

Conclusion: The findings of a diverse set of experiments are consistent as to the advantages of pre-primary educational experiences in improving school performance.

Improvement as revealed in standardized tests

--Research by Brain, Burgess and Deutsch related to preschool experience for culturally disadvantaged children indicated significant differences in favor of the experimental groups who had had preschool experience on such measures as the Columbia Mental Maturity Scale, Peabody Picture Vocabulary Test, and Stanford-Binet Intelligence Test. (in Mindess and Keliher, 1967)

--Strodtbeck reported that, following thirteen weeks of stimulating nursery school experience, IQ scores of culturally deprived children were raised as much as 6.9 points, and verbal intelligence 20 points or more. (in Mindess and Keliher, 1967)

--In a study intended to provide, during two preschool years and during the first

year of school special experiences which might contribute to better intellectual processes and personal ad ustments by culturally underprivileged children, Klaus and Gray found a mean gain of 14 IQ points on the Stanford-Binet for the preschool group as compared with a 2.3 gain for the control group. On the Peabody Picture Vocabulary Test, the experimental groups made a mental age gain of 6.16 months compared with 0.9 months for the controls. (in Mindess and Keliher, 1967)

--Of five research studies reviewed by the New York State Department of Education, comparing cognitive development of pupils who had been in kindergarten with those who had not, four favored the group which was given kindergarten experience. (Bureau of Child Development and Parent Education, 17: 1968.

--Phyllis Levenstein's program, which used home tutors provided with carefully prepared sets of materials (Verbal Interaction Stimulus Materials), demonstrated gains of 17 IQ points over a seven month period.

--Disadvantaged children, in a program administered by Becker and Engelmann, showed significant gains after a two year lapse on the Stanford-Binet and the Wide Range Achievement Test. By the first grade these children deomonstrated second grade level in reading and arithmetic, as well as greater confidence in tackling difficult tasks. In a study at the Academic Preschool in Champaign, Illinois, an experimental group of children advanced 17.1 IQ points in year one and 8.6 points in year two , while a control group gained only 8 points in year one and lost 3 points in year two.

Conclusion: The findings of a diverse set of experiments are consistent as to the advantages of pre-primary educational experiences in raising IQ scores and performance on other cognitive measures.

Reduction in dropouts

--Preliminary evidence from Appalachia suggests that children in preschool programs are less likely to drop out of school earlier than non-enrolled children. (Knitzer, Jane and Parker, Ronald, 1970, p. 39) Further evidence of first grade failure is tied to inadequate preparation for school. (Alden, Vernon, et al., June, 1968, p. 9)

--In the Duluth Public Schools' Retention Report of July 1,1964, a large percentage of high school dropouts had been retained one or more years in their early school experience. Since failure for these culturally deprived children begins early and forms the basis for continued failure, and since the evidence indicates the importance of early stimulating experience to later school success, it becomes vitally important to attempt ways of providing appropriate preschool readiness experience. (Tamminen, A. et al.,1967, p. 2)

--Other studies have shown that school dropouts and school failures can be traced to unsuccessful competition in the first two years of school. (Chesteen, Hilliard, et al., 1966, p.5) It is concluded that the background experience of culturally deprived children does not adequately prepare them to adjust to the routine and style of the typical school.

Conclusion: Studies relating preschool educational experiences to school dropouts do not establish other than a very tentative relationship; in large measure this may be due, however, to the effects of other numerous variables affecting the child over time.

School or social adjustment

--In a study by Wolff, it was found that nearly two-thirds of the Head Start children quickly adjusted to school, as compared with only 40% of their classmates. (in Mindess and Keliher, 1967)

--Of four research studies reviewed by the New York State Department of Education, comparing the social adjustment of pupils who had been in kindergarten with those who had not, none of the four showed differences between the groups. (Bureau of Child Development and Parent Education, 17: 1968)

Conclusion: Of all variables studied, improved social adjustment has shown least relationship to preschool attendance.

Improved health and nutritional standards

--Early diagnosis of serious health conditions has been possible for thousands of children in Head Start projects. Bureau of Indian Affairs examinations found that 37% of Indian children enter school with hearing defects, and 25% arrive with speech, visual or other impairments. (Mariana Jessen, from interview) Correction of these defects permits a child to benefit maximally from whatever form the early learning experience takes.

--The 1970 White House Conference on Children report, "Profiles", discloses that three-fourths of mental retardation cases are due to other than genetic abnormalities, or infections and accidents. Within that group, the Report suggests that a proportion is caused by inadequate nutrition, child rearing and social and environmental opportunities.

--Reporting on a National Nutrition Survey, "Profiles on Children" set the

proportion of preschool children with substandard levels of selected nutrients (1968-1969) at between 4% for thiamin and 56% for Vitamin A. Preschool programs with good nutritional components can help to overcome such deficiencies, some of which affect the learning capacity of children.

--Pre-natal and infant medical and nutritional services can greatly affect the capacity of the infant and child to acquire the intellectual ability he is otherwise destined to have. Prematurity and complications in childbirth, maternal health, maternal and infant nutrition, and pre-natal care are all associated with neurological, mental, sensory, and other handicapped conditions. Prematurity is excessively represented in the non-white segment of the population. The non-white infant is subject to perinatal, neonatal and infant death, and in survivors, by reduced functional potential. (Birch, Herbert, 1967, pp.5-8). Furthermore, the brain in utero develops rapidly. Without sufficient protein, it will not develop fully. Dayton describes the effects of malnutrition on brain development:

> " Studies of animals have indicated that growth in all organs occurs in three phases: (1) hyperplasia, during which the number of cells increases; (2) hyperplasia and hypertrophy, during which the number of cells continues to increase and the size of the individual cells also increases; and (3) hypertrophy, where growth occurs only in cell size. These studies suggest that during the phase of hyperplasia, malnutrition can interfere with cell division, resulting in fewer cells in the brain, which seems to be a permanent effect, whereas malnutrition during the phase of hypertrophy results in a smaller than normal cell size, which can be corrected by providing adequate nutrition. Therefore, the nutritional status during the phase of hyperplasia, in the early periods of nervous system development, would seem to be exceedingly critical.
>
> In humans the greatest growth spurt for the brain occurs during the fetal period. By the end of the first year of

> life, the brain has assumed approximately 70% of its adult weight, and by the end of the second year its growth is almost complete. Studies of the human brain have shown a very rapid increase in DNA content toward the end of the period of gestation; the increase slows down after birth but continues until the child is 5 or 6 months of age. These findings suggest that cell division in the brain normally occurs during gestation and the early part of the first year of life. Markedly fewer cells (less DNA) were found in the brains of a small sample of children who died of malnutrition during the first year of life than in the brains of a sample of well-nourished children who died in accidents. It is not known whether this represents irreversible change or how severe the nutritional deprivation must be to show these effects. But the studies demonstrate the importance of gestation and early infancy in nervous system development." (Dayton, Delbert H, in Children. Nov.-Dec. 1969, pp. 213-214)

Conclusion: Medical and nutritional research strongly documents the need for universal programs for quality medical and nutritional programs for all pregnant mothers and young infants.

Permanence of gains

Question as to the permanence of gains made by children in Head Start programs was raised in a report of evaluation by Westinghouse Learning Corporation. (Montes, Miguel, Compact, Dec. 1969, p. 40) Unfortunately the conclusion reached by some, that preschool experience for the disadvantaged is of questionable value, is not necessarily warranted by the facts. Lois-ellen Datta summarizes alternative explanations for "leveling off" findings (Miller, Sprigle, Gray and Klaus, Hodges, Spiker and McCandless, Karnes, Nimnicht, DiLorenzo, et al.):

> I) Class Norms. --"Since the teacher is primarily interested in the progress of the whole class, she must set the level of class activities below that necessary to challenge the more advanced Head Start children and give more attention to the group of children who are less advanced."

2) Learning Cycles. --"If learning occurs in spurts followed by periods of consolidation, then during the first year of school, Head Start and non-Head Start children are at different stages of the learning cycle. With time, the development of Head Start children might again accelerate."

3) "...the low-income child and his family require a different kind of program than that typically found in the school. It may be that when the child is provided over a period of time with the necessary attention from teachers who are adequately trained and equipped with materials oriented to his needs and when he and his family continue to receive services such as those provided in the Head Start program, he will continue to accelerate developmentally." (Follow through was designed to provide these continuing services.)

Beyond the foregoing are other possibilities:

--Child-teacher ratios usually increase dramatically in public school, reducing the possibility for individualization of programs for the child.

--The environment may have changed from an "open" classroom to a structured one, or vice versa.

--The duration of the preschool program may have been insufficient to overcome the environmental deficits of the child.

--Gains in areas other than cognitive were not measured. What were these and how durable were they?

Conclusion: Evidence from existing studies aimed at assessing the durability of gains made by children participating in preschool programs is not conclusive. If at the worst, carefully controlled, longitudinally designed evaluative research were to substantiate that gains from existing programs are dissipated after a year or two, one might look to formative evaluation studies to develop improvements in the program rather than to discard altogether the gains of even a temporary nature which have been disclosed in so many of the studies reported in this section.

Need for Further Research and Evaluation

Except for reports of the effects of parent education on early childhood learning, we were somewhat surprised to learn of the paucity of research on learning at ages

two and three. Most of the literature describes research on the first eighteen months of the child's life and on development and education from the age of four. La Crosse and Patrick's comprehensive review of research on early childhood learning underscores that research on many facets of infant learning is insubstantial. "There are almost no published studies on children during the second and third years of life." (La Crosse, Robert and Patrick, Lee, eds., 1970, p.255) A good deal of knowledge is needed, therefore, before operating programs of a national character can be rationally supported, except that where a mother with children under four must work, some effective substitute environment must be provided.

Conclusion

The evaluative studies reported above do not exhaust the list of those which have been conducted. While they vary as to goal, outcome, educational approach or measurement approach, the reports lend substantial credence to the benefits of early learning programs.

A national master plan for a comprehensive program of research with children of age three is essential to a decision as to whether or not group programs should be implemented for that age group. In addition, considerably more evaluative research, of all early childhood programs, of both a formative and summative nature is required; using longitudinal designs; involving control groups; providing for a taxonomy of objectives; and supporting development of reliable companion measuring devices and techniques.

NATIONAL NEEDS FOR EARLY CHILDHOOD PROGRAMS

This section of the report attempts to quantify national needs for early childhood learning programs by determining gaps in numbers of children under six now being served and by projecting numbers who, according to proposed recommendations, should be enrolled by the year 1980.

Absence of Solid Data

The absence of reliable, comparable and consistent population data on children under six has represented a major obstacle in developing completely valid statements as to need, and consequently, aggregate cost. Along with others currently working in this field, we have encountered examples of double counting and rough estimating. Moreover, it has often been necessary to work from data based on surveys using different time horizons or varying assumptions, compounding the problem of treating the results in any overall manner.

It is clear that an information system to serve the needs of planners and managers engaged in preschool education is critically needed. The planning and financing of the presently envisioned comprehensive program requires much more accurate and current information than is now available. Ronald Parker, in his study of Day Care in 1970, laments the fact that "Even within the Federal Government there is no one data-gathering system that applies to all federally funded programs for children." (Parker, p. 14).

Nevertheless, while the statistical limitations of specific data on early childhood learning do present problems of consistency, we believe that the general direction or magnitude of the conclusions reached would not materially change.

The Universe of Children Under Six

Bureau of Census data and projections have been used to estimate the universe of children under six. The Bureau builds projections around a series of assumptions; of these, we have given Series C and Series E most consideration. We discarded the most frequently used Series C projections, because their underlying assumptions "have not fully reflected current developments in birth control, expecially the liberalization of abortion laws...and the recent changes in the propensities of women to pursue careers." (Froomkin, 1971). On the basis of Series E, we expect that the preschool population will decrease by 1975 but will slowly rise again by 1980. On the whole, the number of preschool children for the decade 1970-1980 will be relatively stable.

Because they tend to be most comparable and current, we have obtained sample survey population figures for the year ending March, 1970 and March, 1971 for the 1969 and 1970 data. These surveys break down the relevant population into that within the poverty level ($3,968 for a non-farm family of four in 1970), the segment to which we give highest priority in our recommendations. Because the base period for census population projections was July 1, 1969, our projections, when based upon a March 1, 1970 base period will probably show a small variation.

The overall population data were n ext analyzed in terms of children in families, the segment that comprises the universe from which need for preschool education arises. We assumed that the prevailing ratio of children in families to total children in 1970 would be constant,and therefore made use of pro-rata apportioning for the different age groups. There were 21.4 million children in families in 1970; of these 7.2 million were four and five years old. By 1980, children under six would number about 22.8 million, of whom 7.28 million would be four and five. The decline in the population expected by 1975 led to the prediction that there would be more four year

olds than fives in 1980, essentially the reverse of 1970. (Tables I and II)

87

TABLE I

ESTIMATES OF POPULATION BY AGE[1] (000)

	1969	1970	1975	1980
Total Under Six	21,720	21,532	20,875	22,907
Five Year Olds	3,927	3,723	3,298	3,592
Four Year Olds	3,718	3,576	3,397	3,757
Three Year Olds	3,571	3,481	3,465	3,822
Under Three Years Old	10,504	10,752	10,715	11,736

1 See Appendix, A-1 for discussion of procedures for estimating age breakdowns.

TABLE II

ESTIMATED CHILDREN IN FAMILIES, BY AGE AND RACE [1] (000)

	1969	1970	1975	1980
Total Under Six	21,579	21,395	20,750	22,770
White	17,895	17,735	17,202	18,876
Black	3,349	3,319	3,216	3,529
Indian		64.6		
Five Years Old	3,899	3,684	3,262	3,552
Four Years Old	3,702	3,551	3,373	3,731
Three Years Old	3,550	3,464	3,448	3,803
Under Three Years Old	10,428	10,696	10,661	11,677

1 See Appendix, A-II, for discussion of procedures for estimating numbers of children in families.

Source: 1969 and 1970 data are from March, 1970 and March, 1971 Sample Surveys of Bureau of Census.
1975 and 1980 figures are adapted from the Froomkin Associated projections, Table 9.

Areas of Priority

Our review of research in the field has elucidated the importance of the years before six to all children, regardless of socioeconomic status, when they are in a phase of most rapid growth and greatest susceptibility to environmental influences. Because research disclosed that comprehensive preschool educational programs are of particular benefit to disadvantaged children, however, it is to this group that we address our first priority in a national program of pre-primary education. We recognize within this position nevertheless, that an educational program based on a mix of socioeconomic backgrounds and ethnic membership is probably more meaningful and more effective to the participating child. (Zigler, 1969).

--Children in Poverty

We use the poverty income level defined by the Office of Economic Opportunity and the Bureau of Census as our point of reference. In 1970, the poverty income level was defined as $3,968 for a non-farm family of four.[1] Adjusted annually in relation to change in the consumer price index, the poverty income level would be expected to reach approximately $5,500 in 1980.

The period 1959-1969 showed a decidedly decreasing trend in the absolute amount and percentage of children under six living in families whose incomes were under the poverty level, from 26% or 6,269,000 children in 1959 to 15.3% or 3,298,000 children in 1969. (Profiles of Children, 1970, p.138) However, during the year 1970, there was a rise in the number and incidence of poor ("poor" means under the "poverty level") children under six. (The increase in families meeting the poverty criterion

---

1 (Source: Bureau of the Census, Poverty Statistics)
The poverty income level was defined in 1963 as $3,128 for non-farm family of four, and has been adjusted annually to fluctuations in the Consumer Price Index.

in 1970-71 is not believed, however, to reflect a general trend; we believe that the national will and desire to combat poverty will continue to manifest itself in government programs, so that a return to the decreasing trend in poverty levels in 1959-1969 may be projected after 1975.)

In 1970, there were 3.5 million poor children under six, of whom 1,217,000 were four and five years old. By 1980, poor children under six would number 2.567 million, of whom 819,000 will be four and five years of age (Table III). It is interesting to speculate on at least one implication of the expected decrease in the number of children in poverty by 1980: that the number of four and five year olds under the poverty level will drop from 1,013,000 in 1975 to 819,000 in 1980, making it possible to use the remaining, existing spaces for children from families whose income at least marginally exceeds the poverty level.

453-405 O - 72 - 7

TABLE III

CHILDREN IN FAMILIES UNDER THE POVERTY LEVEL INCOME[1] (000)

	1969	1970	1975[2]	1980[3]
Total Under Six	3,298	3,546	3,175	2,567
White	1,871	2,093	1,800	1,336
Black	1,372	1,384	1,321	1,125
Five Years Old	569	635	499	398
Four Years Old	559	582	514	421
Three Years Old	553	558	527	429
Under Three Years Old	1,617	1,771	1,635	1,319

Source: 1969 and 1970 data are based on OEO tables prepared by the Bureau of Census, Poverty Statistics Division, from its March, 1970 and March, 1971 surveys.

1 See Appendix, A-III, for methodology for projecting poor children in families.

2 1975 data show the same proportional relationships observed in 1969.

3 1980 data show the continuation of the decreasing poverty trend observed from 1959 to 1969 with a trend deviation observed in 1970 to possibly, 1975.

Children in Families with Income Under $7,000

Although not in the same financially pressed conditions as children under the poverty level, lower middle-income children have also been shown to benefit from stimulating educational experiences. Currently pending legislation appears to be cognizant of the dilemma of the middle-class population which cannot afford quality educational programs in day care centers but does not qualify for subsidized programs. The income cut-off for several day care and child development bills under consideration in the 92nd Congress, is placed at $6,900; if passed, children who fall under this income level would be able to obtain preschool education at public expense.

Because income breakdowns are computed on different income levels by several government agencies, our figures often use an income cut-off of $7,000 rather than $6,900; we believe resulting discrepancies from this difference are likely to be slight. The number of children of families in the income level under $7,000 was 2.033 times the number of children under the poverty level in 1969. Although the poverty income criterion is expected to increase to about $5,500 by 1980, the decreasing incidence of children in poverty and the decreasing number and percentage of people in the income brackets under $7,000 (in 1970 dollars) (Current Population Reports Series P-60 No. 75, 1970), would tend to keep the relationship between the two income groups relatively the same as in 1969.

TABLE IV

ESTIMATED CHILDREN IN FAMILIES WITH INCOME BELOW $7,000 (1970 Dollars), BY AGE (000)

	1969	1970	1975	1980
Total Under Six	6,706[1]	7,209[1]	6,455[1]	5,219[1]
Five Year Olds	1,214	1,240	1,013	809
Four Year Olds	1,153	1,197	1,046	856
Three Year Olds	1,100	1,168	1,072	872
Under Three Years Old	3,239	3,604	3,324	2,682

---

1 The number of children under six in families with incomes under $7,000 is 2.033 times the number of children under six in families under the poverty level. (1969 ratio). While there may be variation in the rate of escape of people from the poverty income level and $7,000 income, the paucity of available data together with the fact that population data are often broken off at $7,500 leads us to use the observed 1969 ratio.

Source: 1969 figure for total children under 6 is from the Bureau of Labor Statistics analysis of the March, 1970 Survey. There is a slight variation from the figures used by OEO, which was assumed to be due to the weighted inflation of sample results.

--Children of Mothers in the Labor Force

The rising demand for child care arrangements has been propelled in part by the needs of mothers in the work force and welfare mothers who either desire, or are required by law, to work. During the past decade, a rapid rise has been noted in mothers, with children under six, in the labor force: 20.7% of mothers with children under six or 2,957,000 mothers in the 1959 labor force; up to 32% or 4,555,000 in 1970. The rate of increase has been steady at about 5% a year. (Table V).

In the absence of a trend line which describes the rate of change of children of mothers in the workforce, the change rate of mothers within the labor force was assumed to apply to the change in the number of children as well. Single age group ratios, e.g. five year olds, were based on age distributions found for the total population in the different time periods. The implicit assumption guiding this technique was that single age distributions for the total population are reflected similarly in distributions for children of working mothers.

Children of mothers in the work force were assumed to require full-day programs incorporating a planned educational component. The resulting need figures may be overestimated, however, because the labor force includes some who are still looking for a job as well as those already employed. Moreover, some women may presently be employed only on a part-time or temporary basis.

> "...there is no simple relationship between the availability of child care facilities and the employment of mothers...If both acceptable jobs and suitable day care facilities were available, however, it would appear that many of the nonworking mothers would join the labor force." (Westinghouse Survey of Day Care, p. xvii).

Development of keener measures of correlation between the characteristice of labor

95

force participation of mothers with children under six and the demand for full day services would go a long way toward making possible more meaningful and dependable conclusions.

It was estimated that of the 5.8 million children whose mothers are in the labor force, 873,000 or 15%, were poor in 1970. This ratio is assumed to be constant until 1975. The annual rate of decrease in poverty for the total population was assumed to apply from 1975 to 1980. (Table VI).

Since legislative interest has focused on lower middle-income families which need, but cannot afford, adequate child care services, projections by means of apportioning methods of this population segment was under taken. The underlying assumption is that the number of children with mothers in the workforce and family income under $7,000 (1970 dollars) when taken as a ratio of the children under poverty with mothers in the workforce, will remain the same throughout the decade under study.

The reader will note that the following three tables show an increasing trend until 1980 in the number of children with mothers in the labor force. This development stems from the assumption that the 4% annual growth rate in the number of mothers with children under six joining the workforce, observed in the 1959-1969 decade, will continue. Of course, with increasing availibility of quality day care and early learning facilities, annual increase in working mothers may be even higher.

TABLE V

CHILDREN IN FAMILIES WITH MOTHERS IN THE LABOR FORCE, BY AGE AND RACE (000)[2]

	1969	1970	1975	1980
Total Under Six	5,807[1]	6,039	7,346	8,937
White	4,541	4,722	5,745	6,989
Black	1,167	1,214	1,477	1,796
Five Year Olds	1,051	1,039	1,153	1,385
Four Year Olds	999	1,002	1,190	1,466
Three Year Olds	952	978	1,220	1,492
Under Three Years Old	2,805	3,020	3,783	4,594

Source: [1]1969 figure for Total under Six is from Bureau of Labor Statistics Analysis of March, 1970 Survey data.

[2]For methodology, see Appendix A-V.

TABLE VI

ESTIMATED CHILDREN IN FAMILIES WITH MOTHERS IN THE LABOR FORCE AND FAMILY INCOME WITHIN THE POVERTY LEVEL, BY AGE (000)

	1969	1970	1975	1980
Total Under Six	873	906	1,102	891
Five Year Olds	158	156	173	138
Four Year Olds	150	150	178	146
Three Year Olds	143	147	183	149
Under Three Years Old	422	453	568	458

For methodology, see Appendix A-VI

TABLE VII

ESTIMATED CHILDREN IN FAMILIES WITH MOTHERS IN THE LABOR FORCE AND INCOME BELOW $7,000, BY AGE (000)

	1969	1970	1975	1980
Total Under Six	1,775[1]	1,842[1]	2,240[1]	1,811[1]
Five Year Olds	321	317	352	281
Four Year Olds	305	306	363	297
Three Year Olds	291	298	372	302
Under Three Years Old	858	921	1,153	931

Source: 1969 Total under Six figures from the March, 1970 Sample Survey, Bureau of Census, as analyzed by the Bureau of Labor Statistics.

[1]Children under six in families with mothers in the labor force and income below $7,000 = 2.033 of those children under six with mothers in the labor force and income under the poverty level. (1969 ratio)

--Migrant Children

Problems of locating and identifying migrant children have rendered difficult the task of estimating the need for early childhood programs for this segment of the population. "Migrants are hard to count because they are always moving and hard to characterize in statistical terms because they have for generations been isolated from the very contacts and sources to which researchers usually turn for information." (Wednesday's Child, p. 4) Although letters were dispatched to state migrant education directors requesting estimates of preschool migrants, the results were discouraging, e.g. "at this time we do not have an accurate estimate of (migrant) children under six." (Frazier, Lee, 1970)

The U.S. Office of Education defines a migrant child as one who "has moved with his family from one school district to another during the past year in order that a parent or other member of his immediate family might secure employment in agriculture or related food processing." (Texas Education Agency, 1970, p.2) There have been variations in practical application of the definition and "nobody really knows how many school-age migrant children reside in each state during all or part of a given year." Estimates are often adapted from adult migratory farm worker data collected by the Farm Labor Office of the U.S. Department of Labor. (Wednesday's Child, pp. 8-10) Figures presented here were calculated and used by the HEW Office of Child Development, Day Care division, which itself questions their reliability for precise interpretation. In the absence of better information, however, they have been used as the basis for projection.

It was estimated that there were 186,000 migrant children under six in 1970. This figure is expected to remain constant or even decrease as (a) more migrants seek other opportunities, and (b) more capital-intensive, technologically advanced methods of

agriculture reduce the need for migrant workers. Because of the frequent absence of older persons during employment in the fields, and because three to five year old children have been reported on occasion to be used as baby sitters for younger infants, a preschool program for all migrant children from birth to six is proposed. (Curtis, Hazen and Aguirre, Hank) A pilot project undertaken by United Migrants for Opportunity, Incorporated uses mobile classrooms which follow the children from their home state to states where their parents work. This model would appear to provide the educational continuity often lacking for migrant children.

--Ethnic and Geographic Sub-groups

Although in absolute numbers, the white population has the largest number of poor, percentages of minority ethnic groups who are poor are much greater; analysis in terms of these target populations was therefore believed to be useful for planning programs.

Black children under six constitute the largest minority group. Statistics disclose that the rate of decrease in the incidence of poverty has been greater for the white populace than for the black. (Profiles of Children, p. 138) In fact, extension of the trend from 1959 to 1969 could lead to a situation where both the absolute number and percentage of poor black children under six would be greater than their white counterparts. (Table II)

64,000 Indian children under six were estimated to be living on or adjacent to Federal reservations in 1970 (Congers, Louis). The White House Conference on Children Chart Book points out that 80% of Indian families on reservations were living in poverty in 1970 (p. 21). Therefore, about 51,000 poor Indian children were in need of early childhood services.

Population data for the Mexican - American subgroup are also difficult to acquire. For most reporting purposes, they are counted as 'white'. Together with the Puerto

Ricans and other Spanish-surnamed persons, however, they are estimated to be the second largest ethnic minority, concentrated mainly in the urban areas and experiencing a high incidence of poverty. (CED, 1971, p. 10).

> "Data regarding the Mexican Americans are almost totally inadequate. The number of research studies, scholarly writings and fiscal appropriations dealing with Mexican American problems is so meager that the area has been labeled 'the most signal failure in American education'. Large numbers are in this country illegally. Unfamiliarity with the law, combined with misinformation commonly circulating in their communities about government deportation practices, have caused many Mexican Americans to avoid census takers and to refuse to acknowledge their ethnic origin. There is also the problem of terminology as to when one is a Mexican American." (CED, 1971, p.85)

The Appalachian region has also been a focus of major interest because it contains a sizeable number of poor children, most of whom are white. Increasing public support for this region has come primarily through the Appalachian Regional Commission. "Forty-three percent of all children under six in Appalachia were in families categorized as poor by OEO standards and are likely to require some special services, yet Head Start is available to only about 11% of them. Also, over 85% of the poor children under six in Appalachia receive no financial aid or services in the form of AFDC or Head Start." (Lazar, Irving, Appalachia, Jan. 1970, p. 5) In 1970, there were 1,821,277 children under six in the entire Appalachian region (Appalachian Regional Commission). Black children constitute about 9.2% of the total. Based on the estimate that 43% of all children were poor in 1970, 783,149 poor children would be estimated to have been concentrated in the Appalachian region alone.

Parents as a Target Group

Parent education has been advocated for parents of all children under four, particularly those in the economically disadvantaged population. In fact, parent participation has often been cited as a crucial part of any preschool program. (Schaefer, Earl, 1970, p. 19-12)

Group administered pre-primary programs frequently include parent education components. This report envisions separate parent education programs, concentrating upon home visits and/or group instruction methods, to serve primarily those parents of poor children who are not enrolled. Because it is recommended that all poor four and five year olds be enrolled in planned preschool programs, the main target of parent education activities would be poor, non-working mothers of children under four.

In 1970, (population surveys as of March, 1971) there were 1,655,000 families with children under six falling under the poverty level. (Bureau of Census, Poverty Statistics Division) Since 3,546,000 children under six were within the poverty income level, we concluded that there were about two poor children under six per family, an assumption similarly made by the Series E projections of the Census Bureau. This ratio was used to determine the number of parents eligible for the parent education program. Since parent education activities could target either on one (usually the mother) or both parents without extra cost, the target group is actually the number of families rather than the number of either mothers or fathers. Table VIII estimates the number of families who might receive parent education services through 1980.

As described earlier, the assumptions of economic improvement and of continuation of the decline in poverty witness in the 1959-1969 decade, lead to the possibility of expanding the programs to include, on a sliding fee arrangement, those with income above the $7,000 (1970 dollars) in a 1980 parent education program.

TABLE VIII

ESTIMATED TARGET POPULATION FOR PARENT EDUCATION: FAMILIES WITH CHILDREN UNDER SIX NOT SERVED IN PRESCHOOL EDUCATIONAL FACILITIES,[1] BY INCOME LEVELS (000)

	1969	1970	1975	1980
Under Poverty Level[2]	803	864	706	570[3]
Under $7,000	1,595	1,778	1,436	1,160[3]

1
The assumptions are that: a) as recommended all four and five year old children in the relevant income levels would be enrolled in preschool educational facilities; b) children under four of working mothers would be served in family day care homes which offer parent education.

2
Poverty income level was $3,968 for a non-farm family of four in 1970. It has been annually adjusted to changes in the consumer price index.

3
The figures assume no national preschool educational programs for three year olds. If recommended reseorch on three year olds shows that they are ready for and would benefit from planned preschool education in facilities, the adjusted figures would be: 431 (poverty) and 634 (less than $7,000).

Summary of Needs at the Poverty Income Level

1970 In 1970 the total number of poor children under six was 3,546,000. Of these, 1,217,000 were four and five year olds, of whom 306,000 had mothers in the labor force and were assumed, therefore, to need full-day services. In 1970 1,817,000 poor children would have required preschool educational facilities This figure includes 600,000 children under four whose mothers worked, the segment which would have required service in family day care centers. In addition, there were 864,000 parents who might have benefitted from separate parent education activities.

1980 The number of children expected to require preschool educational services in 1980 will depend on the results of the recommended research study of three year old children. Assuming that the research shows a need for group administered education for three year olds, there will be 1,248,000 poor three to five year olds and 458,000 children under three with mothers in the workforce, or a total of 1,706,000 children who require educational and day care programs. Without three year olds, some 819,000 four and five year olds and 607,000 children with mothers in the workforce, or a total of 1,426,000 children would require these services. In addition, there will be about 570,000 poor families with children under six not in educational facilities, the target group for parent education activities. (Table VIII)

Current Enrollment

Enrollment figures are based on October, 1969 and October, 1970 sample surveys. There are obvious deviations from the total population figures which were based on March, 1970 and March, 1971 sample surveys. However, there will be a high measure

of comparability because the surveys took place in the same school years.

--Total Enrollment

There were 4.1 million three to five year olds who attended nursery schools or kindergarten in 1970. (Table IX) This amounted to an enrollment rate for five year olds of 80.1%. Pre-primary enrollment (kindergarten plus prekindergarten) amounted to 2,643,000 five year olds or 69.3% of the total. Of these, 2,552,000 were in kindergarten. In 1970, 27.8% of all four year olds or 1,007,000 were enrolled, of whom 571,000 were in prekindergarten. 12.9% of all three year olds or 454,000 were enrolled; of these, 432,000 were in prekindergarten.

Primarily because of variations in birth dates established by state laws to determine when children may be enrolled, some five year olds enter grade 1, while some four and even three year olds are already in kindergarten. In addition, errors in the reporting of children's ages during sample surveys complicate the problem of non-comparability of data.

Froomkin estimated total enrollment figures for three to five year olds for 1975 and 1980. His projections, based on attendance figures from a number of European countries, were admitted to be rather high. The assumptions were that 55% of all three year olds, 77% of all four olds and virtually all of the five year olds would be enrolled by 1980. Extension of current trends would result in enrollment of only half that number by 1980, although the actual magnitude of preschool enrollment will, of course, depend greatly on the extent of public financing.

TABLE IX

POPULATION by AGE and ENROLLMENT by LEVEL, PRESENT and PROJECTED (000)

AGE	1969	1970	1975 Projections		1980	
			High	Low	High	Low
3 and 4 year olds						
Population	7,423	7,136	6,862		7,579	
Enrollment	1,194	1,461	2,321	1,825	4,958	2,479
Prekindergarten	778	1,003	1,592	1,252	3,401	1,701
Kindergarten	416	457	729	573	1,557	778
5 year olds						
Population	4,001	3,814	3,298		3,592	
Enrollment	3,130	3,055	2,783		3,367	
Pre-Elementary	2,755	2,643	2,404		2,887	
Prekindergarten	79	91	85		102	
Kindergarten	2,676	2,552	2,319		2,785	
Elementary	375	412	379		480	

Adapted from: Hurd, Gordon. Oct., 1969 Preprimary Enrollment, Washington, D.C.: GPO, 1970.

_____ Oct., 1970 Preprimary Enrollment, (xerox copy, final copy in press)

Froomkin, Joseph. Projections of Enrollment, Table 9. May 1, 1971.

453-405 O - 72 - 8

--Enrollment of Priority Target Groups

Enrollment in preprimary programs seems to have corresponded directly with family income; the higher the income, the greater the probability that three to five year olds were enrolled. (Hurd, 1970) This may be accounted for by the fact that (a) prekindergartens have by and large been privately operated, with tuition fees outside the capacity of the poor to pay; and (b) families with higher incomes are more likely to reside in areas where kindergartens are available, or are more insistent upon kindergarten education for their children.

In 1970, 19.6% of all four year olds in families with incomes under $3,000 were enrolled. (Table X) Assuming the same ratio applied to those four year olds with family income under the poverty level of $3,968, approximately 114,000 poor four year old children would have been enrolled. In that same school year, 56.7% of all enrolled four year olds were in prekindergarten. (Table XI) Using this percentage, we estimate about 65,000 poor four year olds in prekindergarten.

Enrollment for five year olds in families with income under $3,000 amounted to 46.8% in 1970. (Table X) There would then be about 297,000 enrolled five year olds living within the poverty income level; of these, about 83.5% of 248,000 would be in prekindergarten. (Table XI)

Although there were 1,217,000 poor four and five year olds who might have gained significant benefits from enrollment in preschool education, only 411,000 were actually enrolled. There remains, therefore, a wide unsatisfied gap to which national programs should be directed, due possibly to the following reasons: (a) there were not enough spaces

available (Table XIV); (b) parents were satisfied with existing custodial arrangements; (c) most parents were not aware of the benefits which could accrue to their children from enrollment in quality early childhood learning programs. By 1975, we would expect all poor four and five year olds to be enrolled in preschool education facilities. In the case of three year olds, 7.4% with family incomes under $3,000 were enrolled in 1970. (Table X) A slightly higher enrollment percentage for three year olds in 1975 would be expected, because of the expected increase in numbers of poor mothers with children under six joining the labor force. If the recommended research indicates that three year olds are ready for and would measurably profit from education in preschool facilities, then all poor three year olds should also be enrolled by 1980. (See Appendix A-VI for consolidated table showing potential target groups to be served by income level.)

TABLE X

POPULATION AND ENROLLMENT BY AGE AND INCOME (000)

	October, 1969			October, 1970		
	Population	Enrollment No.	%	Population	Enrollment No.	%
3 Years Old						
Under $3,000 @	330	19	5.8	305	23	7.4
Under $7,500 @	1,642	98	6.0	1,508	131	8.7
4 Years Old						
Under $3,000 @	308	52	16.9	313	61	19.6
Under $7,500 @	1,686	282	16.7	1,509	331	21.9
5 Years Old						
Under $3,000 @	315	152	48.3	298	140	46.8
Under $7,500 @	1,714	1,003	58.5	1,488	891	59.9

@ Note that available data on income groupings were not exactly comparable with the breakdown we have been using, i.e. $7,000 and the poverty level cut-off which was $3,968 for a non-farm family of four in 1970.

Source: Hurd, Gordon E. October, 1969 Preprimary Enrollment, Washington, D. C.: GPO, 1970.

_____ October, 1970 Preprimary Enrollment. (in press)

--General Characteristics

Kindergarten has been mainly supported by public school systems as integral to their educational programs. Prekindergarten offerings on the other hand, have remained essentially nonpublic in nature. (Table XI) Analysis of 1969 and 1970 enrollment data for prekindergartens however, reveals that the public share (but not especially public school share) of the prekindergarten enrollment has slowly increased, largely as a result of the introduction of the Head Start programs in 1965.

While a small number of public school systems do operate nursery schools, they amount to only a small fraction of the total prekindergarten enrollment. (NEA Research Division, 1968, p. 6)

TABLE XI

ENROLLMENT DATA OF THREE TO FIVE YEAR OLD CHILDREN, BY TYPE OF PROGRAM, AGE AND SPONSORSHIP (000)

	October, 1969		October, 1970	
	No.	%	No.	%
3 Year Olds				
Kindergarten	22	100.0	22	100.0
Public[1]	9	40.9	12	54.5
Nonpublic	14	59.1	10	45.5
Prekindergarten	293	100.0	432	100.0
Public[1]	68	23.2	110	25.4
Nonpublic	225	76.8	322	74.6
4 Year Olds				
Kindergarten	394	100.0	435	100.0
Public[1]	285	72.3	318	73.1
Nonpublic	109	27.7	117	26.9
Prekindergarten	485	100.0	571	100.0
Public[1]	135	27.8	176	30.8
Nonpublic	350	72.2	395	69.2
5 Year Olds				
Kindergarten	2,676	100.0	2,552	100.0
Public[1]	2,229	87.0	2,168	84.9
Nonpublic	446	13.0	384	15.1
Prekindergarten	79	100.0	91	100.0
Public[1]	39	49.3	45	49.4
Nonpublic	40	50.7	46	50.6
3,4 and 5 Year Olds				
Kindergarten	3,092	100.0	3,010	100.0
Public[1]	2,523	81.6	2,498	83.0
Nonpublic	569	18.4	512	17.0
Prekindergarten	857	100.0	1,094	100.0
Public[1]	242	28.2	331	30.3
Nonpublic	615	71.8	763	69.7

1. Public Programs may include both those in public school systems and those funded by public monies outside of public school systems.

Source: Hurd, Gordon. October, 1969 Preprimary Enrollment, 1970 Preprimary Enrollment 6-28

TABLE XII

FEDERAL COSTS AND CHILDREN SERVED IN DAY CARE FACILITIES WITH FUNDS COMING FROM PUBLIC SOURCES OUTSIDE THE PUBLIC SCHOOL SYSTEM[A]

Enabling Legislation and Program	Number of Children Served in Day Care Facilities, FY 1971	Total Federal Dollars FY 1971 (million $)
Economic Opportunity Act		
Title I; Concentrated Employment	9,500	$ 7.5
Title II-B: Head Start		
Full Year		
Part Day 174,000		
Full Day 89,000		
	263,000	278.0
Summer	209,000	46.6
Parent-Child Centers	3,200 (0-3 years)	5.0
(2,485 families in 32 Centers)	3,900 (siblings 3-18)	
Title III-B Migrant (only rough figures available)	2,000	1.3
Elementary and Secondary Education Act		
Title I	348,000	67.9
Social Security Act		
*Title IV-[1] Work Incentive Program	117,162 (incl. school age)	54.0
[2]AFDC	197,479 (incl. school age)	273.51
[3]Title IV-B Child Welfare Services	20,000	1.9
	1,173,241	$735.71

* State Costs Related to the Program:

1	$ 18.0
2	91.17
3	21.839

Sources; OCD Day Care Division; OE Public Affairs; OEO Migrant Branch.

A These costs do not include such other programs as Sesame Street, School Lunch, etc.

--Regional Distributions

Regional and geographic breakdowns of current enrollment information reveal that more children were enrolled in preschool programs in the "Metropolitan, other" classification than in inner-city or non-metropolitan categories, during both 1969 and 1970. This is in contrast to the high probability that a significant proportion of the target population may be residing in "inner-cities". The same finding is buttressed further by the fact that a higher enrollment ratio exists in nonpoverty areas as compared with poverty areas in Standard Metropolitan Statistical Areas with populations greater than 250,000. (Table XIII).

The lowest regional enrollment ratio has been experienced in the South. In 1969 the proportion of families below the poverty level was larger in the South than in any other region and was more than twice as large for black families in every region. (Profiles of Children, p. 21) However, black children were enrolled at slightly higher rates than whites in regions outside the South, and at slightly lower rates in the South. Since more than half of all three to five year old black children live in the South, the relatively low enrollment rate for the region as a whole resulted in a smaller national percentage of black enrollment. (Hurd, 1970, p.6)

TABLE X III

POPULATION AND ENROLLMENT OF THREE TO FIVE YEAR OLDS, BY AGE, PLACE OF RESIDENCE AND REGION (000)

	October, 1969 Population	Enrolled No.	%	October, 1970 Population	Enrolled No.	%
Total 3,4 and 5 Year Olds						
1. Metropolitan						
Central	3,222	1,202	37.3	3,087	1,218	39.4
Metropolitan, other	4,096	1,608	39.3	3,949	1,705	43.1
Nonmetropolitan	4,107	1,139	27.7	3,913	1, 181	30.2
2. Total in SMSA's population greater than 250,000	6,388	2,512	39.2	6,127	2,599	42.4
Poverty Area	1,040	348	33.5	999	376	37.6
Nonpoverty Area	5,347	2,163	40.5	5,128	2,221	43.3
3. Regions						
N E	2,763	1,066	38.6	2,621	1,127	43.0
N C	3,162	1,124	35.5	2,976	1,161	39.0
S	3,470	906	26.1	3,456	980	28.4
W	2,054	853	41.5	1,897	836	44.1
Five Year Olds						
1. Metropolitan						
Central	1,111	783	70.5	1,076	755	70.1
Metropolitan, other	1,480	1,115	75.3	1,389	1,062	76.5
Nonmetropolitan	1,410	857	60.8	1,349	826	61.2
2. Total in SMSA's population greater than 250,000	2,250	1,672	74.3	2,144	1,605	74.8
Poverty Area	356	233	65.3	346	237	68.5
Nonpoverty Area	1,894	1,440	76.0	1,798	1,367	76.1
3. Region						
N E	947	711	75.1	953	701	73.5
N C	1,113	883	79.3	1,014	870	85.8
S	1,214	578	47.6	1, 194	568	47.6
W	726	582	80.2	654	505	77.2

Table XIII, continued.

	October, 1969 Population	Enrolled No.	%	October, 1970 Population	Enrolled No.	%
Four Year Olds						
1. Metropolitan Central	1,089	296	27.2	1,012	315	31.1
Metropolitan, other	1,339	368	27.5	1,288	447	34.7
Nonmetropolitan	1,380	216	15.7	1,320	245	18.5
2. Total in SMSA's population greater than 250,000	2,122	607	28.6	2,006	691	34.5
Poverty Areas	346	88	25.4	340	107	31.4
Nonpoverty Areas	1,776	519	29.2	1,666	584	35.1
3. Regions						
N E	944	280	29.7	849	315	37.2
N C	1,086	191	17.6	976	193	19.8
S	1,124	225	20.0	1,160	278	24.0
W	654	184	28.1	635	220	34.6
Three Year Olds						
1. Metropolitan Central	1,021	121	12.1	999	148	14.8
Metropolitan, other	1.277	125	9.8	1,272	196	15.4
Nonmetropolitan	1,317	67	5.1	1,244	110	8.9
2. Total in SMSA's population greater than 250,000	2,015	232	11.5	1,977	303	15.3
Poverty Areas	338	28	8.3	313	32	10.4
Nonpoverty Areas	1,677	204	12.1	1,664	270	16.2
3. Regions						
N E	845	75	8.9	819	111	13.6
N C	963	50	5.2	986	98	10.0
S	1,132	103	9.1	1,102	134	12.1
W	673	87	12.9	608	111	18.2

Source: Hurd, Gordon. E. Oct., 1969 Preprimary Enrollment, Wash., D.C.: GPO, 1970.
Oct., 1970 Preprimary Enrollment (in press)

Facilities for Preschool Education

Since public school systems have generally provided and increasingly continue to meet kindergarten needs, we assume that projected enrollment needs in kindergarten will be met. With the population decline expected in 1975, there may be excess capacity in kindergarten facilities, some of which may be used for prekindergarten programs.

Insofar as licensed day care facilities are concerned, their number and capacity have been growing over the years. indicating the rising demand for child care services. In 1970, the estimated capacity of licensed day care centers and family day care homes amounted to 778,000 children (unpublished estimate of National Center of Social Statistics.) There are more facilities actually available, since "only about 2% of family day care homes and 90% of day care centers are licensed." (Westinghouse, 1970, p. vii) The majority of licensed facilities are proprietary in nature. Because licensing requirements differ from state to state, and often depart from Federal Interagency Day Care Standards, (Senate Finance Committee, 1971, p.14) we cannot even be sure of uniformity in present policies among licensed units. The proportion of public licensed day care centers and family day care homes to the total facilities (which include privately administered ones), has increased from 5% in 1967 to only 8.5% in 1970.

A recent study of day care resulted in the conclusion that in general, quality care is not profitable. (Abt Associates, 1971, p. 10) The capacity of wealthier families to pay the costs aside, the economically disadvantaged population stands in particular need of facilities and programs with public or philanthropic support.

TABLE XIV

TOTAL NUMBER AND CAPACITY OF LICENSED DAY CARE FACILITIES, 1960-1970

	Day Care Centers		Family Day Care Homes		Total	
	No. of Facilities	No. of Spaces	No. of Facilities	No. of Spaces	No. of Facilities	No. of Spaces
1960	4,426	141,200	13,600	42,200	18,026	183,400
1967	10,400	393,000	24,300	81,900	34,700	474,900
1969	13,600	518,000	32,700	120,000	46,300	638,000
1970*	16,800	631,000	40,200	147,000	57,000	778,000

Day Care Centers

	Public		Voluntary		Proprietary	
	No. Of Facilities	No. of Spaces	No. of Facilities	No. of Spaces	No. of Facilities	No. of Spaces
1960	310	52,244	1,239	16,944	2,877	72,012
1967	400	22,600	2,600	113,900	6,900	239,300
1969	230	34,700	4,100	178,000	7,600	266,000
1979*	1,200	50,500	5,600	233,000	8,600	299,000
Family Day Care Homes						
1960	680	no data	136	no data	....	....
1967	800	2,500	400	1,300	18,400	63,900
1969	2,500	8,000	550	2,100	27,700	102,000
1970 *	4,400	15,600	70	2,100	33,100	120,000

Source: Ronald Parker and Jane Knitzer. Background Paper on Day Care and Preschool Services: Trend in the 1960's and Issues for the 1970's, p. 10-11.

* 1970 Estimates from National Center for Social Statistics, HEW Social Rehabilitation Service (in press)

Instructional Staff

Recommendations as to the "proper" pupil-teacher or adult-teacher ratio for preschool do not always agree, making projections of staff needs quite tenuous. The use of aides, whether parents, high school students or other volunteers, has been widely recommended as a valuable adjunct to the teacher with a professional degree, yet little use is made of teachers' aides. (Abt Associates, 1970, p. 7) "Contrary to expectations, few day care personnel are volunteers: fewer than 4% of the staff are volunteers and only 1% of them work full time." (Westinghouse, 1971, p. ix) Nevertheless, wider use of aides will not only lessen the financial burden of preschool programs, but also will help to improve the quality of the education provided.

The trend toward increasing the educational value of day care programs calls for more teachers qualified in the field of early childhood development to work with well-trained aides. Department of Labor projections indicate that manpower needs for growth and replacement for all teachers will total 1.2 million over the 1968-1980 period (including 120,000 pre-primary teachers). If past patterns of entry into the elementary teaching profession continue, the potential supply will be almost 2 million or about 800,000 greater than will be demanded. (Hedges, Janice, 1970, p. 44) A recent New York Times article, using NEA data, supports projections of oversupply, predicting that this phenomenom is not simply a short-term one. (N.Y. Times, July 28,1971)

In determining the number of future teachers required, class or group sizes must be taken into account. Ideally, five year olds should attend classes with an adult : student ratio of 1 : 10. This ratio differs from the Federal Interagency Standards for Day Care (1 : 7), but agrees with the recommendations of the Education Commission

of the States. The Federal Interagency Day Care Standards have been reported to be rather stringent and there have been recommendations to change some regulations. (Parker, Ronald, p. 53). Class size may be expected to vary from 20 to 30 students, depending on the need and the facilities available.

For four year olds, an adult : student ratio of 1 : 7 is recommended, in agreement with the Federal Interagency Day Care Standards. Class size for four year olds should have an upper limit of 20 children, with the average varying from 15 to 20. For children under four, a family day care environment is envisioned, with an adult : student ratio set at 1 : 5.

Total enrollment projections for three to five year olds are presented in Table IX. In order to arrive at the maximum number of teachers needed in the field of early childhood education, we used high and probably overly optimistic projections. We assumed an average class of twenty children as the base group for one professional teacher. The high projections show 7,845,000 three to five year olds enrolled in preprimary educational programs for whom 392,250 professional teachers would be needed by 1980. Since 120,000 preprimary teachers have already been estimated as available, the difference (272,250) might be met from the projected oversupply of 800,000 teachers by 1980 who might be retrained to work in early childhood education. (Hedges, Janice, 1970, p. 44) At the same time, because of financial limitations, a continuing program of selection and training of paraprofessionals and volunteers must still be thoroughly planned and funded. The problem of bringing properly qualified teachers into those geographic areas most in need of them represents still another problem requiring solution.

APPENDIX to NEEDS: METHODOLOGY

A-I. Method for Estimating the Age Breakdown for Population Projections, (Table I)

A. In 1975 $\frac{\text{4 yr. olds}}{\text{3 and 4 yr. olds}} = \frac{3,350}{6,768} = 49.5\%$ (Bibliography: 122, p.37)

Froomkin estimate of 3 and 4 year olds. = 6,862

4 year olds = 6,862 (49.5) = 3,937 (Bibliography: 41)

B. 1975 $\frac{\text{Froomkin 3-5}}{\text{Census 3-5}} = \frac{10,160}{10,111} = 1.0048$

Census projections under 6 = 20,775

Adjusted figure = 20,775 (1.0048) = 20,875

C. 1980 $\frac{\text{4 yr. olds}}{\text{3 and 4 yr. olds}} = \frac{3,706}{7,476} = 49.57\%$

Froomkin estimate of 3 and 4 yr. olds = 7,579
4 yr. olds = 7,579 (49.57) = 3,757

1980

$\frac{\text{Froomkin 3-5}}{\text{Census 3-5}} = \frac{11,171}{11,118} = 1.0048$

Census projections under 6 = 22,798
Adjusted figure = 22,798 (1.0048) = 22,907

D. 1969 and 1970 data are based from March, 1970 and March, 1971 sample survey.

A-II. Basis for Estimates of Children in Families, (Table II)

In 1970, Children in Families:

Total under 6	= 99.4%
White	= 82.9% of total children under 6 in families
Black	= 15.5% of total children under 6 in families
5 years old	= 98.9%
4 years old	= 99.3%
3 years old	= 99.5%
Under 3 years old	= 99.5%

A-III. Method for Projecting Poor Children in Families (Table III)

A. 1975 figures use same percentage of people in poverty as in 1969, based on the belief that:

a. 1970-1971 is not reflective of downward trend in poverty. However, the increase in 1970-71 and possibly 1972, is expected to taper off to the 1969 level by 1975;

b. in 1970, children under 6 in poverty, comprised 16.5% of total. In 1969, it was 15.3% and in 1968 it was 16.0%.

In 1969 and 1975 Children in Families in the Poverty Level:

under 6 = 15.3%
White = 56. 7% of children under 6 in poverty
Black = 41. 6% of children under 6 in poverty

5 yr. olds	=	15.7% of total children under 6
4 yr. olds	=	16.2% of total children under 6
3 yr. olds	=	16.6% of total children under 6
under 3 years old	=	51.5% of total children under 6

B. 1980 data assumption: trend from 1959-1969 would resume by 1976-1980.

1959 = 6,268 (26%)
1969 = 3,298 (15.3%)

The annual compounded rate of decrease for the period 1959 to 1969 has been observed to be 3.56%. In 1975, there were 3,175 poor children under six. Five years later, at a 3.56% annual rate of decrease, there would be 2.567 million children under six.

By 1980; y 1980 = 1,813

5 yr olds = 15.5% of total children under 6
4 yr. olds = 16.4% of total children under 6
3 yr. olds = 16.7% of total children under 6
under 3
yrs. old = 51.4% of total children under 6

3 yr. olds = 16.8% of children under poverty under 6
under 3 yrs. old = 52.2% of children under poverty level under 6.

Under 6, White: 1969 = 1870 1959 = 4159

The annual compounded rate of decrease for the period 1959-1969 has been 4.7%. In 1975, 1,800 white children under six were estimated. The 1980 figure at a 4.7% annual rate of decrease would then be 1,336.

Under 6, Black: 1969 = 1372 1959 = 2022

The annual compounded rate of decrease was 2.8%. Black children under six were estimated to be 1,321 in 1975. By 1980, the estimated number would be 1,125. A decreasing gap in the absolute number of poor white and black children under six is observed under this assumption.

A-V. Method for Estimating Children in Families with Mothers in the Labor Force, by Age and Race (000) (Table V)

A. The only figure available was the total number of children under 6 in 1969 with mothers in the labor force which was 5,807,000.

B. The percent change of the numbers of mothers in the labor force amounted to approximately 4% per annum from 1959 to 1970. (There were 2,957,000 in 1959 and 4,555,000 mothers in the workforce in 1970)

C. This annual percent increase was assumed to apply to the number of children under 6 with mothers in the workforce.

1969 = 5,807 (children under 6)
y 1970 = 5,807 (1.04) = 6039
y 1975 = 5,807 (1.265) = 7346
y 1980 = 5,807 (1.539) = 8937

D. The 1969 black and white proportion of all children under 6 with mothers in the labor force was assumed to apply for the other time periods. 78.2% were white children and 20.1% were black.

E. The age distribution for the different years as shown by the Census projections (122) were assumed to apply to the children of mothers in the work force.

	1969	1970	1975	1980
5 year olds	18.1 %	17.2 %	15.7 %	15.5 %
4 year olds	17.2	16.6	16.2	16.4
3 year olds	16.4	16.2	16.6	16.7
under 3 years old	48.3	50.0	51.5	51.4

453-405 O - 72 - 9

A-VI. Method for Estimating Children in Families with Mothers in the Labor Force and Family Income within the Poverty Level, by Age (000) (TABLE VI)

A. The only figures available were:
Children under 6 in families with mothers in the labor force in 1969 : 5,807,000
Children under 6 in families with mothers in the labor force and income under $7,000: 1,775,000

B. The total of poor children under 6 in 1969 was 3,298,000 (TABLE III), or 49.2% of the 6,706,000 children under 6 with family income under $7,000.

C. 1,775,000 (49.2) = 873,00 poor children of mothers in the workforce in 1969 (TABLE VI)

D. 873,000 is 15% of the 5,807,000 total children under 6 of mothers in the workforce. For the projection of children under 6 of mothers in the workforce, 15% were assumed to be poor until 1975. From 1976 - 1980, the 3.56% rate of decrease in poverty was assumed to apply. In 1975, 1,102,000 children under six with mothers in the workforce were estimated to be poor. By 1980, the estimate number would be 891,000.

E. The age distribution for the total population was assumed to hold for this segment.

A-VII

EARLY CHILDHOOD EDUCATION: POTENTIAL TARGET GROUPS OF CHILDREN IN FAMILIES TO BE SERVED, 1970

Age:	5	4	4 and 5	3	Under 3	Total Under 6
Total Poverty Level (under $3,968) Children (Table III)	635	582	1,217	558	1,771	3,546
With mothers in labor force (Table VI)	156[c]	150[c]	306[c]	147[d]	453[d]	906
With mothers not in labor force	479[a]	432[b]	911[a,b]	411	1,318	2,640
Total Low Income ($3,968-$7,000) Children (Table III, IV)	605	615	1,220	610	1,833	3,663
With mothers in labor force (Table VII)	161[c]	156[c]	317[c]	151[d]	468[d]	936
With mothers not in labor force	444[a]	459[b]	903[a,b]	459	1,365	2,727
Total Low Income ($7,000 or less) Children (Table IV)	1,240	1,197	2,437	1,168	3,604	7,209
With mothers in labor force (Table VII)	321[c]	310[c]	631[c]	302[d]	933[d]	1,866
With mothers not in labor force	919[a]	887[b]	806[a,b]	866	2,671	5,343
Total Pre-School Population by Age (Table I)	3,723	3,576	7,299	3,481	10,752	21,532
With mothers in labor force (Table V)	1,039	1,002	2,041	978	3,020	6,039
With mothers not in labor force	2,684	2,574	5,258	2,503	7,732	15,493
Percentages Not Enrolled (Table X)						
Under $3,000 family income	53.2%	80.4%		92.6%		
Under $7,500 family income	40.1%	78.1%		91.3%		

a: Enriched Kindergarten
b: Half-day Education in Day Care
c: Full-day
d: Infant Program in Family Day Care

DIMENSIONS OF COST

Overview

Existing data on the costs of preprimary educational programs have been found at best to be fragmentary, sketchy and unsystematic. Mary Dublin Keyserling, in a telephone interview, commented that "nothing on the cost side has been responsibly done. Estimates are by guess and by gosh." Sometimes comparisons between various types of programs are tenuous because overall per-child costs are often given without specifying cost breakdowns; upon investigation it is found that different elements compose different programs. "Unfortunately, current practice rarely compares the total amount spent per pupil with a breakdown of what the money is buying." (Firmon, William, et al, 1967, p.91)

Wide geographic cost variations are often observed for the same program. For instance, annual per pupil costs of Head Start programs have been estimated to run from $870 in South Carolina to $2,800 in Boston. (Education Commission of the States, p.47) "Costs for day care can only be spoken about on a general basis." (LaCrosse, p.15) The state of cost information is such that, at the least, we must recommend early development of a standardized cost accounting system that will permit future comparisons to be made on a more concrete and rational basis. A companion management information system is also called for, so that information on numbers and backgrounds of children enrolled, program objectives, program types, adult staff characteristics, later individual progress, and other evaluative information could be accumulated for better decision-making in the future.

As a minimum, a cost accounting system should price separately:

1). Salaries of teaching staff by level (professional, paraprofessional, assistant), plus fringe benefits.
2). Salaries of other personnel, plus benefits by category, e.g. health, social services.

3). Turnover costs for personnel
4). Transportation
5). Licensing
6). Staff development and training
7). Food
8). Research and evaluation
9). Supplies
10). Capital outlay: building, equipment, and/or space rental.
11). Parent involvement and education
12). If proprietary, surplus over costs (if any)

In reporting, organizations should be required to specify the number of hours, (days, weeks, months, years)children are provided service, the child-staff ratios (for educational services only); the position level of the staff (teachers, aides, etc.); number of children by age, race, sex, socioeconomic status, and other factors significant to their education.

Since preschool education is a highly labor intensive operation,costs in large measure are accounted for by related staff expenditures, a conclusion corroborated by other investigations in this field. The findings of Abt Associates in "A Study of Child Care, 1970-71" show that "about 4/5 of the real costs of child care are personnel costs."

While costs are high, savings have been effected by a number of devices, among them recruiting of children within short distances of the facility to limit transportation costs; use of existing structures, such as available elementary school classrooms or churches (although facilities should be adequate to the purpose), mobile vans or playground spaces (in warm climates); use of school lunch programs; renovating rather than constructing new buildings; coordinating with other programs to effect savings in purchasing and joint use of supportive personnel, e.g., the 4-C Community Coordinated Child Care program--created by a Federal Panel on Early Childhood in 1968. Parent Cooperative Preschools, International claims to spend 20% to 30% less than private nursery schools, mainly by the use of non-working mothers as classroom assistants, freeing staff for other functions.

Cost savings may also be achieved by establishing preschool facilities at secondary schools. While serving the preschoolers as non-paid aides, the high school students may learn about child development. With some 26,000 high schools in the country, and an average of 20 preschoolers per school, some half million additional spaces for early childhood learning become readily available.

It has been noted that present day care facilities are frequently under-enrolled. Transportation difficulties have been cited as a possible cause of under-enrollment, especially for poor children. Transportation arrangements and their funding have therefore been incorporated as adjunct to the programs being proposed. Another reason for this may lie in the fact that there is a time lag in enrollment because parents are temporarily committed to other arrangements. In any case, preliminary market survey analyses of each interested community are indicated before decisions to build new facilities are made.

Cost-benefit information on early childhood educational programs is largely conjectural, rather than data based. The reasons for the absence of such studies are essentially similar to the reasons for the weakness of evaluation research: lack of clear, measurable statements of objectives or goals and inadequate measures of effectiveness.

The "outputs" frequently associated with these programs are: a) success as an adult; b) satisfactory academic achievement, at least in elementary school; c) dropout prevention; d) delinquency prevention. All of these require evidence collected over a long period of time (in some cases, over a decade or more). As is the case with any longitudinal study, the likelihood of being able to obtain acceptable data, uncontaminated by multiple, often covert, intervening variables, is not high.

On the other hand, as was seen in the section concerned with research, generally positive gains have been found for preschool learning in terms of increased IQ scores or other test measures, reduced dropouts, reduction of widening gaps between disadvantaged and non-disadvantaged children, increased social skills, early detection of health problems which are potentially debilitating to learning, and adjustment to school. Day care supporters also hope that increases in day care facilities (with a good educational base) would enable more welfare mothers to take job training and eventually, actual jobs. This would mean a consequent reduction in the tax burden for public welfare. (Senate Finance Committee, 1971, pp.2-3)

Other benefits may be derived from internally focused analysis. For example, large day care centers seem more economical to operate than smaller ones, but is the kind of warmth and attention given to children in large facilities equally good? (The Large Day Care Center as a Child-Rearing Environment, mimeo, undated)

Furthermore, in assessing costs within an individual program, it is well to note that the most costly service is not necessarily the most beneficial to the child. For example,

a child-adult ratio at present is arbitrarily determined. Is 1:6 or 1:7 more or less effective with children? If less, how much less? What trade-off will be acceptable under conditions of limited funding?

Detailed Cost Analysis of Preschool Programs

The costs to meet current and projected needs outlined on the following pages are based on the following assumptions.

1. There should be publicly funded preschool education, in kindergarten or day care facilities, as appropriate, for all four and five year olds whose family income is below the poverty level. Financial considerations permitting, these services should also be extended to children whose family income falls under $6,900 (in 1970 dollars).

2. Services should be available to all children under six whos mothers are employed. For families whose incomes fall within the poverty level (below $3,968 in 1970, annually adjusted to the consumer price index), such services should be available at public expense. Should governmental finances be available, such publicly funded preschool programs should also be available without cost to those whose incomes do not exceed $6,900 (1970 dollars).

3. For poor, nonworking mothers with children under six who are not in preschool educational programs, community parent education centers should be established. Using matching funds, these centers may be administered by a variety of authorized agencies which would provice services to parents outside the home, or through various approaches to in-home services.

4. Federal grants at the level of 80% of the total should be available for renovation or construction.

5. Diagnostic health, psychological and educational services should be available for children beginning at the age of four or younger. No fee should be required for poor families, nor, if funds permit, for those whose income falls below $6,900.

6. All programs should be considered voluntary, but outreach efforts should be made to acquaint parents with the availability and objectives of these programs.

7. A national research and evaluation program should be mounted at the rate of 5% of the outlay for early childhood education, in order to assure continued growth in knowledge required to produce programs of high quality. Research should concentrate at the beginning on the possibility of having three year olds involved in group administered preschool activities.

8. Funds should be provided for development of models of training and for actual training of staff, both paid and volunteer; both professional and paraprofessional. Funds are also required to update and improve early childhood education programs at colleges and universities. The Education Professions Development Act could be the initial vehicle for obtaining needed funds.

9. The first two years of the proposed program should be essentially used as start-up time for staff training and other necessary arrangements to insure quality of programs.*

---

* The cost estimates presented were generally adapted from the survey done by Abt Associates in "A Study in Child Care, 1970-71", and the Standards and Costs of Day Care by HEW, Office of Child Development in 1967. The divergences in the ultimate program costs arrived at were brought about by different assumptions as to adult:student ratios and the needed supportive services. The ratios were based on average enrollment, not on average daily attendance, as was done by Abt.

--Kindergartens

In the school year 1967-1968, pupil-teacher ratios in public school kindergarten were:

	1 Semester or Less	More than 1 Semester
Full Day	24	22
Half Day	40 a)	48 a)
Other	35 a)	36 a)

a) These ratios reflect the fact that teachers were responsible for more than one class daily. (NEA, 1969, p. 33)

Since teachers often handle classes without other assistance, the above ratios approximate our definition of adult : pupil ratio. It may be noted that the Federal Interagency Day Care Standards prescribe a ratio of one adult to seven five year olds. The Education Commission of the States, on the other hand, recommends a ratio of 1:10, still a considerable reduction from prevailing adult : child ratios.

It is noted that some four year olds are presently enrolled in kindergartens. In fact, the median admission age for public school systems with kindergarten programs in 1967-68, was four years, ten months. (NEA. p. 5)

In adding adults to staff to achieve either of the recommended adult:student ratios, it is proposed that aides or paraprofessionals supplement the professional teaching staff, as for example, one teacher and two aides for a class of 30 kindergarten students for a single session in one day. While class size may vary, the upper limit should be set at around 30 students. Teachers should be expected to teach only one half-day session, allowing the remainder of the day for parent education and participation along with

preparation for the next class.

It may be noted that two half-day sessions of 30 children can be accommodated by using the same facilities and equipment. There should be one teacher for each class but the two aides could work with both teachers. Volunteers and older children for cross-age tutoring could further supplement the teacher, as could students enrolled in proposed courses in Child Development.

Per pupil expenditures for public school kindergartens ranged from $150 to $800 in 1967-68. Increased parent involvement and the increased adult : student ratio would raise costs to an average annual figure of $1,147 per pupil. (Table A). This is derived from a prototype model based on an adult : student ratio of 1 : 10. Transportation, nutrition, and health services were all incorporated as essential, in view of the economic, social and cultureal backgrounds of the target group.

As seen above, kindergartens are not now infrequently staffed at a ratio of twenty to thirty children per teacher, for two and a half to three hour sessions. Since kindergartens are normally held for half a day or less,(Hawaii is an exception), food costs tend to be negligible. Comparisons of costs of present and recommended kindergarten arrangements must therefore be made with the understanding that future proposals call for an enriched program, predicated on the idea of a half-day session; or for children of poor working mothers who are ready for an equivalent kindergarten experience, full-day programs. (Table C) The costs for the educational components are based on the 1970 - 1971 average salary schedule of elementary school teachers in public schools. (NEA) There is a difference between salaries received for teachers in kindergarten and those in day care facilities; the latter figure, based on results of the Abt Associates' survey, may rise as a result of the increase in the demand for preschool educational facilities or greater employment of professional teachers.

During school year 1966-67, only a very small segment of public school systems operated nursery schools; a total of 11,970 systems with enrollment of 300 or more, only 148 conducted nursery programs. In 141 of these, according to the NEA survey, average pupil-teacher ratios were reported as follows:

Full Day Sessions	13.6 : 1
Half Day Sessions	25.2 : 1
Other	31.1 : 1
Total	24.7 : 1

More widespread use of teacher aides has been made in preschool porgrams, other than kindergartens run by public school systems. When they have been employed, with an average of one aide to a teacher, the average adult : pupil ration tends to hover around 1 : 13.

Again, prototype models are presented for both half day and full day educational programs in day care settings. (Tables, B,C,and D) In these, costs of full day care with a significant educational component are estimated for four and five year old children of poor working mothers, in which children would be provided for over a ten to twelve hour day for the entire calendar year. In both types of day care situations, half day or full day, parent education is designed as integral to the program, although its extent would be expected to be greater for nonworking than for working mothers. For working mothers, group activities and possibly home visiting would be arranged at night or during the weekends, to meet their schedule requirements. Again, essential supplementary services are provided in the programs envisioned.

In recognition of the needs of children younger than four whose mothers are working or in training, we recommend family day care homes as the setting for early childhood education, with the proviso that the care include stimulating environmental experiences both for infants and toddlers. The health care and nutrition programs may take place in coordinated community centers, as in other day care educational programs. Transportation costs are shown, although in many cases this cost may be eliminated when children are drawn from the same neighborhood. A "Summary of Comparative Component Costs" for the various program arrangements shown in Tables A, B, C and D appears as part 2 of the Technical Appendix at the end of this section.

TABLE A

Operating Costs of Education in an Enriched Kindergarten Program

e.g., in a class of 30 children with a 1:10 adult:pupil ratio.
2 half-day sessions in a single day are held with the 2 aides working in both sessions while the teachers are involved in parent education activities.

		Annual Cost		Per Child Cost
Education:	2 teachers @ 9025	$18,050		
	2 aides @ 3450	6,900		
	Fringe benefits, payroll taxes b) 10.2%	2,545		
	Training 5% of salary	1,247		
		28,742	(60)..479	
	Educational consumables		35	
	Other		40	$554
Nutrition:	1 cook 1/9 time @ 5,250	583		
	b) 10.2%	59		
		642	(60).. 11	
	Food (2 meals, 2 snacks)		210	
	Other		10	231
Health:	1 nurse 1/9 time @ 5,900	655		
	b) 10.2%	67		
		722	(60)..12	
	Other		7	
				19
Occupancy:	1 Custodian 1/9 time @ 4,550	505		
	b) 10.2%	51		
		556	(60).....	9
Administration:	1 principal 1/9 time @ 15,126	1,669		
	1 Ass't. Principal 1/9 time @ 14,967	1,663		
	1 Secretary/Bookkeper 1/9 time @ 5,700	633		
	b) 10.2%	404		
		4,369	(60)...73	
	Other		84	
				157
				970
	Transportation			177
				$ 1,147

* no rent since the program would run as an integral part of school system.
Assume: grades K-8 program with 1 section per full-day segment.

TABLE B

Operating Cost of Half Day Education in a Day Care Center

e.g., 60 students in a session. Four classes with 15 students each to maintain adult : student ratio of 1 : 7. The aides would work with both groups while the teachers engage in work preparation and parent education the rest of the day.

		Annual Cost		Per Child Cost
Education:	8 teachers @ 6000	$48,000		
	4 aides @ 3450	13, 00		
	Fringe benefits and payroll tax b) 10.2%	6,304		
	Educational Consumables		35	
	Other		40	
				$668
Nutrition:	1 Cook 2/3 time* @5,250	3,500		
	Fringe benefits and payroll tax b) 10.2%	357		
		3,857 (120)...	32	
	Foodstuffs		210	
	Other		10	252
Health:	1 nurse, 2/5 time * @ 5,900	2,360		
	Fringe benefits b) 10.2%	241		
		2,601 (120)...	22	
	Other		7	
				29
Occupancy	1 Custodian, 2/3 time * @4,550	3,032		
	Fringe benefits b) 10.2%	303		
		3,335 (120)...	28	
	Rent		200	
	Other		44	272
Administration:	1 Director @ 10,450	10,450		
	1 Asst. Director @ 7,750	7,750		
	1 Secretary/Bkkeeper @5,700	5,700		
	Fringe benefits b) 10.2%	2,438		
		26, 338 (120)...	220	
	Other		84	304
				1,525
Transportation:				177
				$1,702

* Time spent is adapted from the survey by Abt Associates (2).

TABLE C

Cost of Full Day Education in a Day Care Center

e.g., in a medium-sized group of 50 children with 3 classes, 2 of fifteen and one of twenty each with adult : pupil ratio set at 1 : 7 for four year olds and 1 : 10 for five year olds.

			Annual Cost		Per Child Cost
Education:	1 Head Teacher	@ 6,750	$6,750		
	2 Teachers	@ 6,000	12,000		
	3 Aides	@ 3,450	10,350		
	Payroll taxes and Fringe Benefits	b) 10.2%	2,968		
	Training 5% of salary	5%	1,455		
			33,523	(50)...670	
	Education Consumables			35	
	Other			40	
					$745
Nutrition:	1 cook, 2/3 time*	@ 5,250	3,450		
		b) 10.2%	352		
			3,802	(50)... 76	
	Food			210	
	Other			10	296
Health:	1 nurse, 1/5 time*	@ 5,900	1,180		
		b) 10.2%	120		
			1,300	(50)... 26	
	Other			7	33
Occupancy:	1 Custodian, 3/8 time*	@ 4,550	1,706		
		b) 10.2%	174		
			1,880	(50)... 38	
	Rent			200	
	Other			44	282
Administration:	1 Director	@ 9,400	9,400		
	1 Adm. Asst.	@ 6,000	6,000		
		b) 10.2%	1,571		
			16,971	(50)... 339	
	Other			84	423
					1,779
Transportation:					177
					$1,956

* "Time Spent" adapted from survey Abt Associates (2).

453-405 O - 72 - 10

TABLE D

Operating Costs of Full Day Services with Educational Component in Family Day Care Homes

(1:5 = adult : pupil ratio)

		Annual Cost		Cost Per Pupil
Education:	1 Day Care Mother @ 4,400*	$ 4,400		
	Fringe Benefits and payroll taxes b) 10.2%	440		
	Training c) 5%	220		
		5,060 (5)	1,012	
	Education Consumables		35	
	Other		40	$1,087
Nutrition:	Food		210	
	Other		10	220
Health:	1 nurse, 1/25 time @ 5,900*	236		
	Fringe benefits and payroll taxes b) 10.2%	24		
		260 (5)	52	
	Other		7	59
Occupancy:	Rent (special maintenance allowance in lieu of rent and central administration space)		50	
	1 custodian, 1/25 time @ 4,550	182		
	Fringe benefits, payroll taxes b) 10.2%	19		
		201 (5)	40	
	Other		49	
				139
Administration:	Supervisor 1/20 time @ 8,000*	400		
	Fringe benefits and payroll taxes b) 10.2%	40		
		440 (5)	88	
	Other		84	
				172
			Sub-total	1,677
Transportation:				177
		Total		$1,854

* Salary figures from HEW Standards and Costs of Day Care (128)

Financing Requirements

--Gross Financial Requirements

In order to provide the basic data crucial for national policy making, need statistics and cost estimates for the different programs are correlated in this section.

A composite picture for the year 1970 has been constructed to show the 1970 costs for a recommended "ideal" program. The 1975 and 1980 projected data were then adjusted to an assumed 3% average inflation rate, based on GNP trend. (Table E)

With the limitations of the cost data in mind, we find that $4.2 billion and $3.9 billion would be the gross amounts needed for 1975 and 1980, in order to serve the target population of poor children under six years of age.

From Table E, the reader may readily determine the costs for alternative program mixes to adjust to money constraints or substantive desires. It is also possible to determine outlays that may be required by stretching out the meeting of program goals; by addressing the needs of only the poor or the needs of higher level income families ($7,000) as well; and for essential research and evaluation in support of improvement of the quality of programs.

TABLE E-1

IDEAL PROGRAM MIX

Program	Target Groups	Annual Operating Cost per unit	(1970) Number (000)	(1970) Total Cost	(1975) Number	(1975) Total Cost	(1980) Number	(1980) Total Cost
I. For Children of Families under the Poverty Level								
A. Enriched Kindergarten	5 year olds, mother not in labor force	$ 1,147	479	$ 549,413	326	$373,922	260	$298,220
B. Half-day Education in Day Care Facilities	4 year olds, mother not in labor force	1,702	432	735,264	336	571,872	275	468,050
C. Full-day Education in Day Care Facilities	4 & 5 year olds, mother in labor force	1,956	306	598,536	351	686,556	284	555,504
D. Infant Program in Family Day Care Homes	children under 4, mother in labor force	1,854	600	1,112,400	751	1,392,354	607	1,125,378
E. Parent Education	mothers of poor children	500[1]	864	432,000	706	353,000	570	285,000
F. Additional Cost incurred for Migrant Program	all migrant children	2,000[2]		20,730		21,138		21,138
				3,448,343		3,398,842		2,753,290
G. T.V.	all poor children under six	1.00[3]	3,546	3,546		3,175		2,567
H. Research	5%			172,417		169,942		137,664
Total with 3% annual inflation rate				3,624,306		3,571,959		2,893,521
						4,139,900		3,888,892
II. For Children of Families Earning Less than $7,000 and above Poverty Level								
Sum of Costs for Program under A-E[4]				3,514,164		3,486,819		2,821,432
Additional Research and T.V. Costs				179,371		177,621		143,724
Total Costs for under $7,000				3,693,535		3,664,440		2,965,156
				$7,317,841		7,236,399		5,858,677
Total with 3% inflation rate						$8,386,986		$7,874,062

[1] Source: Susan Gray, Letter to Education and Public Affairs, June 11, 1971

[2] Figure was assumed to take into account the transportation cost of the teachers involved.

[3] Change in cost due to shift of age groups.

[4] Education Commission of the States, 1971, pp. 34-35.

[5] For breakdown of Cost, see Table E-2.

TABLE E-2

Breakdown of Cost for the Children in Families with Income above Poverty Level and Less than $7,000 (000)

	Cost per unit	(1970) Number	(1970) Total Cost	(1975) Number	(1975) Total Cost	(1980) Number	(1980) Total Cost
A. Enriched Kindergarten	$ 1,147	444	$ 509,268	335	$384,245	268	$307,396
B. Half-day Education in Day Care Center	1,702	459	781,218	347	590,594	284	483,368
C. Full-day Education in Day Care Facilities	1,956	317	620,052	364	711,984	294	575,064
D. Infant Program	1,854	619	1,147,626	774	1,434,996	626	1,160,604
E. Parent Education	500	912	456,000	730	365,000	590	295,000
			3,514,164		3,486,819		2,821,432
F. T.V.	1.00	3663	3,663	3,280	3,280		2,652
G. Research	5%		175,708		174,341		141,072
			$3,693,535		$3,664,440		$2,965,156

--Funds Presently Available

Costs in Table E do not require all new appropriations. Current governmental expenditures directed toward poor children under six, scattered among various legislative acts, could be pooled and managed as part of the larger recommended program design. These might include:

TABLE F

Public Funds Available for Poor Preschool Children*

Programs **			Available Public Funds (in million $)
EOA	Title I-	Concentrated Employment	$ 7.5
	Title II-B	Head Start and Parent Child Centers	339.6
	Title III-B	Migrant	1.3
ESEA	Title I		67.9
S.S.A.	Title IV	Work Incentive Program	72.0
		AFDC	364.6
	Title IV-B	Child Welfare Services	23.739
Model Cities Program (Day Care)			16.356
United Migrant for Opportunities, Inc. (Migrant Mobile Program)			0.963
Appalachian Regional Development Act			6.0
BIA Kindergartens (including Johnson O'Malley funds)			7.150
From Public School Systems: Estimated Kindergarten Expenditures (poor children)			51.099
		: Estimated Nursery Expenditures (poor children)	7.803
T.V.: Sesame Street			2.00
Training:		Education Professions Development Act	5.5
Research and Development: Agency Funding for Early Learning Research			48.55
Health Services:		Migrant Health Program	3.5
		Title V, S.S.A.	15.252
Nutrition: School Lunch and Child Nutrition Act (poor children in kindergarten and prekindergarten)			2.846
			1,043.658

** See Notes and Sources of Data in Technical Appendix to this Section.

* Assumption is made that programs which now provide only for custodial care can be supplemented with quality educational efforts.

Thus, over $1 billion (in 1970 dollars) is currently appropriated for purposes which are integral to the recommended early childhood education program. Something less than $3 billion in new money would be needed, therefore, in 1975 and 1980 to meet projected needs.

--Training and Capital Costs

In FY 1971, $5.5 million in funds were allocated under the Education Professions Development Act to train 3,602 instructional staff members. Assuming these costs to be constant, some $478.5 million would be needed by 1975 for initital training and re-training of the estimated 312,279 teachers, aides and parent educators for the program proposed.

Capital outlay for construction or renovation of day care centers run at approximately $2,000 per child; in some areas, costs are much higher (Women's Bureau, Bulletin 295, 1971, p.27). Some $2 billion would be needed for total capital outlay to meet the needs of children from families earning less than $7,000 for 1975 facilities. This cost would be spread over the whole period of operation; it is partially accounted for in the space rental figure, included in projected costs. The following table shows costs for construction or renovation allocated by income of parents and type of day care provided.

ESTIMATED START-UP CONSTRUCTION OR RENOVATION COSTS

	1/2-day Day Care	Full-day Day Care		TOTAL
	4 yr. olds	5 yr. olds	4 yr. olds	
Poverty-level children	432,000	156,000	150,000	
X % not enrolled	80.4	53.2	80.4	
X $2,000/ child	795,216,000	166,936,000	240,784,000	1,202,936,000
Low-income children	459,000	161,000	156,000	
X % not enrolled	78.1	40.1	78.1	
X $2,000/ child	717,124,000	129,594,000	242,876,000	1,089,594,000
				$ 2,292,530,000

Legislative and executive planning should take account of the need for funding and time to accommodate the costs involved in the start-up phase for training and for construction and/or renovation.

Cost-Ratio Analysis

The reader may find it of interest to compare per pupil costs for various types of preprimary education programs with per pupil costs for public elementary schools. Estimated per pupil expenditure by public elementary and secondary schools for school year 1970-1971 was $832. (National Center for Educational Statistics, 1971, p.93) Using this as a base, cost ratios for five approaches to early childhood learning programs were calculated. (Table G)

TABLE G-1

Cost Relationships between Average Per Pupil Costs in Public Elementary and Secondary Schools and the Various Recommended Programs (1970- 1971)

	Per Pupil Cost	Cost Ratio
Current Per Pupil Expenditure in Elementary and Secondary Public Schools	$ 832	1.00
Enriched Kindergarten	1, 147	1.38
Half day education in day care center	1,702	2.04
Full day education in day care center	1,956	2.35
Family day care home education	1,854	2 .23
T.V.	1.00	.001

If we include capital outlay and interest expenditures in addition to operating expenditures, the average per pupil cost would be about $1,011. Cost ratios for the different programs would then be:

TABLE G-2

Cost Relationships between Average Per Pupil Costs (Current Expenditures plus Capital Outlay plus Interest) in Public Elementary and Secondary Schools and the Various Recommended Programs (1970-1971)

	Per Pupil Cost	Cost Ratio
Per Pupil Expenditures (including Capital Outlay and Interest) in Elementary and Secondary Public Schools	1,011	1.00
Enriched Kindergarten	1,147	1.13
Half day education in day care center	1,702	1.68
Full day education in day care center	1,956	1.93
Family day care home education	1,854	1.83
T.V.	1.00	.001

Funding Possibilities

Total public school expenditures in school year 1970-71 for elementary and secondary programs amounted to $43.1 billion, of which $36.7 billion were current expenditures. The difference is represented by capital outlay and interest. The gross estimated expenditures for the recommended 1970 preschool education program would have been $3.6 billion, or approximately 10%. Since about $1 billion might have been transferred and consolidated from other appropriations (Table F) only about $2.6 billion in new monies would have been required for 1970-1971.

Approaches to funding the proposed early childhood programs other than repackaging and supplementing existing funds are possible, including:

1. Increase in the education foundation formula by the states to include programs for four and five year olds. The state School Board would be authorized to contract with non-school agencies for administration of preschool programs. (Education Commission of the States, 1971)
2. A separate line item in the State education budget for early childhood education.
3. A voucher system and/or add-on to welfare payments. Parents eligible for financial assistance may be given authority to select a preschool program for their children from a register of approved programs. This allowance would be an add-on to any welfare payments presently being received.
4. Larger tax credits for families of low income.
5. A revolving loan fund similar to the legislation introduced by Senator Long, in which children of poor families would be funded free, and a sliding scale fee would be charged to families whose income exceeds the given minimum.
6. Introduction of early childhood programs in all high school and post high school

institutions. With 20 youngsters projected per school, the number of children who might be accommodated would be 500,000 to 600,000 The cost of the course would be borne by the school system; student enrollment costs would be only slightly larger than in other courses.

7. Shifting presently available funds from twelfth grade to preschool. An interesting proposal has been offered by Wilson Riles, California Superintendent for Public Instruction (Time, July 26, 1971), involving elimination of the twelfth grade and substitution of a year of education before the present kindergarten age of five. While the average per pupil expenditure in public elementary and secondary is approximately half the cost of half day education in day care centers, (Table G) the shift of funds would accommodate the needs of a large proportion of our target population.

TECHNICAL APPENDIX: NOTES AND SOURCES OF DATA FOR TABLE F

(Part I)

1. EOA data mostly came from OCD Day Care Division except for the Title III-B figure which was given by the OEO Migrant Division.
2. ESEA Title I share for day care was based on FY 1969 figures. In reality, this may be higher since total ESEA appropriations have increased from $1,123,127,000 in 1969 to $1,500,000,000 in FY 1971. Source: OE Public Affairs.
3. The WIN, AFDC and Child Welfare Services include state funds amounting to $18.0, $91.1 and $21.8 million respectively.
4. The Appalachian Regional Development Act had $8.5 million total appropriation. The estimated FY 1972 total budget has been increased to $10 million. The agency handling the funds is the Appalachian Regional Commission, a Federally funded organization.
5. The Education Professions Development Act appropriations have also been estimated to increase to $5.8 million. This would be for training of teachers and teachers of teachers for preschool to grade three.
6. Funding for Early Learning Research FY 1970 involved NCERD, BEH, BESE, OCD, NIMH, NICHHD and OEO. These amounts have also increased. Source: Searcy, Ellen. Interim Report on Federal Learning Programs made to the National Program on Early Childhood Education, December, 1970 (mimeo).
7. From Public School Systems:

   The estimated kindergarten expenditure was arrived at by using the average of the per pupil expenditure range ($150-$800) in 1967-68, which was $475. This average expenditure was applied to the number of children in public kindergarten with family income of less than $3,000 in Oct., 1970, which amounted to 107,578 pupils.

   The nursery expenditures in public school systems were based on 1966-67 figures and therefore, probably underestimated. The total expenditure for the 141 systems that responded was $15,957,026. The report also showed that 48.9% of the systems offered programs only to the disadvantaged. Thus, this ratio was used to get $7.803 million which is appropriate for '66-'67 but rather low for FY 1971.
8. Funds for the United Migrant Opportunities, Inc. derive from OCD. This will increase for FY 1972 since the half year appropriation has been set at $697,000. Actually, this could be considered part of research and demonstration activities, rather than actual day care allotment.
9. The Model Cities program is handled by HUD. The spending rate has been set at a total of $630,000,000 per year. The day care proportion has been calculated to be $16,356,000 for FY 1971 and FY 1972, spent for 139 cities out of the 149 target cities.

10. The Sesame Street federal contribution is also expected to increase from FY 1971 figure of $2 million. Congress has a line item of $5 million for FY 1972. Actually, there are more federal funds in Sesame Street since the Corporation for Public Broadcasting, which is partially funded by the Federal government, has a share in the show of $1,150,000 for 1970-71.
11. Health Services are administered by the Public Health Administration. In fiscal year 1971, sec. 310 of the Public Health Service Act provided for health services for migrant children with an appropriation of $15,062,000. Of this, $14,000,000 were actual grants and $1,062,000 went to operation of the program. 25% of the migrants served were estimated to be children under six years old. This ratio was applied to the actual grant of $14 million to arrive at $3.5 million.
12. Title V of the Social Security Act for Maternal and Child Care funds provided a total of $247,385,000 fy FY 1971. The preschool breakdown could only be estimated at about $103,050,000 which was composed of state grants for maternal and child health services ($59,250,000) and children and youth care ($43,800,000). For the state grants, 8% was preschool and for the children and youth care allotment, 24% was preschool. The services are provided via the Public Health Administration.
13. Funds for the School Lunch and Child Nutrition Act, administered by the Department of Agriculture, amounted to $734,303,000 in FY 1971. In fall, 1970, the total public and private enrollment was 51,600,000 (K-12). Kindergarten and prekindergarten enrollment was 4,104,000. Prekindergarten enrollment was added to total enrollment of 51,600,000 to arrive at total Prekindergarten - 12 enrollment of 52,694,000. Of this, 7.8% was Kindergarten and Prekindergarten. This percentage when applied to total appropriation of $734,303,000 would give the appropriation share of this school population segment, $57,375,634. 4.96% of the children in kindergarten and prekindergarten were in families with income under $3,000. This, applying this percentage to $57,375,634 we arrive at the portion of the appropriation which could go to poor children in kindergarten and prekindergarten, $2.846 million. Again, this appropriation is going to increase since the FY 1972 appropriation is $760,175,000.

TECHNICAL APPENDIX: SUMMARY OF COMPARATIVE COMPONENT COSTS FOR VARIOUS PROGRAM ARRANGEMENTS
(part 2)

Description	Kindergarten	Day Care 1/2 day	Day Care Full day	Infant Program
Facility	In Existing K-8 Schools	In Day Care Centers		In Homes or Centers
Class Size	30	15	2 at 15	1
No. of Sessions	2	4	1 at 20	1
Capacity	60	60	50	5
Adult-Pupil Ratio	1:10	1:7	1:10 5 yr. olds 1: 7 4 yr. olds	1:5
No. Professionals	2	8	3	1 Day Care Mother
No. Aids	2	4	3	
PER PUPIL COST				
Instructional	554	668	745	1087
Nutrition	231	252	296	220
Health	19	29	33	59
Sub-Total	804	949	1,074	1,366
Administration	157	304	423	172
Maintenance	9	72	82	89
Sub-Total	970	1,325	1,579	1,627
Transportation	177	177	177	177
Sub-Total	1,147	1,502	1,756	1,804
Occupancy		200	200	50
TOTAL	1,147	1,702	1,956	1,854

7-26

BIBLIOGRAPHY

Books, Papers, Newsletters

1. Aaronson, May and Schaefer, Earl. Infant Education Research Project: Implementation and Implications of a Home Tutoring Program. (mimeo) 1971.

2. Abt Associates, Inc. A Study in Child Care 1970-1971 (four volumes) Massachusetts: Abt Associates, Inc., April 1, 1971.

3. Alden, Vernon , et. al. The Appalachian Regional Commission Education Advisory Committee Interim Report. Washington, DC.: Appalachian Regional Commission, June, 1968.

4. Appalachian Regional Commission. Federal Programs for Young Children. Washington, D. C.:ARC, October, 1970.

5. _____. Programs for Infants and Young Children. Washington, D.C.: ARC, October, 1970.

6. Averch, Harvey, et. al. What do We Know About Educational Effectiveness? California: Rand Corporation, July, 1971.

7. Barr, Richard and Foster, Betty. Statistics of Public Elementary and Secondary Day Schools: Fall, 1970. Washington,D.C.: GPO, 1971.

8. Beery, Keith. Preschool Prediction and Prevention of Learning Disabilities. California: San Rafael City Schools, March, 1967.

9. Binstock, Eleanor and Costello, Joan. Review and Summary of a National Survey of the Parent-Child Center Program. Washington,D.C.: Office of Child Development, August, 1970.

10. Bissell, Joan. Implementation of Planned Variation in Head Start. First Year Report. Review and Summary, Part 1. Washington,D.C.: OCD, 1971.

11. Birch, Herbert G. Health and Education of Socially Disadvantaged Children. New York: Yeshiva University, 1967.

12. Bloom, Benjamin S. Early Learning in the Home. California: University of California, July, 1965.

13. _____, Hastings, Thomas J. and Madaus, George F. Handbook on Formative and Summative Evaluation of Student Learning. New York: Mc Graw - Hill Book Co., 1971.

14. Boultwood, M.and Curtis, S. J. A Short History of Educational Ideas. London: University Tutorial Press, 1966.

BIBLIOGRAPHY

15. Burgess, Evangeline. Values in Early Childhood Education. Washington, D.C.: National Education Association, 1965.

16. Burke, Arvid, et. al. Educational Programs for the Culturally Deprived. New York: New York State University, 1970.

17. Bureau of Child Development and Parent Education. Research Studies in Kindergarten Education. New York: State Department of Education, 1968.

18. Butler, Annie. Current Research in Early Childhood Education. Washington, D. C.:NEA, 1970.

19. Caldwell, Bettye. A Special Facility for Child Development and Education. Washington, D.C.: Children's Bureau, April 1, 1969.

20. _____. and Richmond, Julius B. The Children's Center--A Microcosmic Health, Education and Welfare Unit. University Progress Report. Syracuse, New York: New York State University, March, 1967.

21. California State Department of Education and Department of Social Welfare. Joint Report 1968-1969 State Preschool Educational Program California: May 18, 1970.

22. Chesteen, Hilliard E. Jr., et.al. Effectiveness of the Head Start Program in Enhancing School Readiness of Culturally Deprived Children. East Baton Rouge, Louisiana: Community Advancement Inc., June, 1966.

23. Child Study Association of America. Parent Involvement.(mimeo, undated).

24. _____. The First Year of Sesame Street: A History and Overview. New York: CTV, December, 1970.

25. Committee for Economic Development. Education for the Urban Disadvantaged. New York: CED, March, 1971.

26. Cooke, Robert. Improving the Opportunites and Achievements of the Children of the Poor. (OEO Memorandum, mimeo) February, 1965.

27. Council of Chief State School Officers. Responsibilities of State Departments of Education for Nursery Schools and Kindergartens. Washington, D.C.: 1961,

28. Curtis, Myrtle, et al. Preschool Guide. Denver, Colorado: Colorado Association of Future Homemakers of America, 1964.

29. Curtiz, Hazen and Klach, Joseph. Florida Pre-Kindergarten Migrant Compensatory Program: An Evaluation. Florida: Florida State University, September, 1970.

BIBLIOGRAPHY

30. Datta, Lois-ellin. A Report on Evaluation Studies of Project Head Start. Paper presented at the 1969 American Psychological Association Convention.

31. Deutsch, M., et al. Selected Papers from the Institute for Developmental Studies-Arden House Conference on Preschool Enrichment of Socially Disadvantaged Children. reprint: Michigan; Merrill-Palmer Institute, Merrill - Palmer Quarterly of Behavior and Development, July, 1964, vol. 10, no 3.

32. Di Lorenzo, Louis T. Pre-Kindergarten Programs for Educationally Disadvantaged Children. Albany: New York State Education Department, Office of Research and Evaluation. Washington, D.C.: Department of Health, Education and Welfare, Office of Education, Bureau of Research, December, 1969.

33. _____ and Salter, Ruth. Second Year Report on an Evaluative Study of Pre-Kindergarten Programs for Educationally Disadvantaged Children. Albany: New York State Department of Education, November, 1967.

34. Directions Seminar. The Children We Neglect (Position Paper) 1966.

35. Duval, Joan. Office of Education Activities in Early Childhood Education. Washington, D.C.: Office of Education, January, 1970.

36. _____. Early Childhood. Washington, D. C.: Office of Education, 1968.

37. Education Commission of the States. Early Childhood Development: Alternatives for Program Implementation in the States. Colorado: Education Commission of the States, June, 1971.

38. Educational Policies Commission, National Education Association. Universal Opportunity for Early Childhood Education. Washington, D.C.: NEA, 1966.

39. Emlen, Arthur C. Realistic Planning for the Day Care Consumer. Expanded version of paper presented to the National Conference on Social Welfare, June 4, 1970. Published, March 18, 1970.

40. Felix, Joseph and Jacobs, James, eds. Title I ESEA Evaluation 1969-1970 . vol. 6, no. 1 Cincinnati: Dept. of Program Administration, February, 1971.

41. Froomkin, Joseph. Projection of Enrollments . Washington, D.C.: Joseph N. Froomkin, May 1, 1971 xerox.

42. Fowler, William. A Developmental Learning Approach to Infant Care in a Group Setting. Paper presented at Merril - Palmer Conference on Research and Teaching of Infant Development, February 11 - 13, 1971.

43. _____ Educating the Culturally Disadvantaged, A Maturing Approach. Washington,D.C.: HEW, November, 1968, Microfilm.

BIBLIOGRAPHY

44. Frazier, Alexander, ed. Early Childhood Education Today. Washington, D.C.: Association for Supervision and Curriculum Development, NEA, 1968.

45. Frost, Joe L. A Study of the Effects of An Elementary School Enrichment Program on the School Achievement of Welfare Recipient Children, Final Report. Austin: Texas University, September, 1967.

46. Gerall, Helene and Crovetto, Lorraine. Evalutation of Project Pre-Kindergarten: Project for Early Admissions. New Orleans: Division of Instruction, New Orleans Public Schools, 1966.

47. Gordon, Edmund W. and Joblonsky, Alelaide. Compensatory Education in the Equalization of Educational Opportunity. New York: Yeshiva University.

48. Gordon, Ira J. Parent Involvement in Compensatory Education. Washington, D.C.; ERIC Clearinghouse on Early Childhood Education, Urbana, Illinois, HEW, Office of Education, 1970.

49. _____. Early Child Stimulation Through Parent Education. Presented at American Psychological Association Convention. Washington, D. C.: September, 1969 mimeo.

50. Gorham, William, ed. Child Development:Summary of the Child Development Task Force Report. Washinton, D. C. : GPO, April, 1968.

51. Governor's Advisory Committee on Preschool Educational Programs. Annual Report, 1969-1970. California: March, 1971.

52. Gray, Susan. Home Visiting Programs for Parents of Young Children. Tennessee: Demonstration and Research Center for Early Education, 1971

53. Grotberg,Edith,ed. Day Care: Resources for Decision. Washington, D.C.: Office of Economic Opportunity, 1971

54. _____,ed. Critical Issues in Research Relating to Disadvantaged Children. New Jersey: Educational Testing Service, September, 1969.

55. _____,ed. Review of Research: 1965 to 1969 of Project Head Start. Washington, D.C.:HEW, Office of Child Development, June, 1969.

56. _____,ed. Designs and Proposals for Early Childhood Research: A New Look. Washington, D.C.: Office of Economic Opportunity, 1971 (mimeo).

57. Grant, W. Vance and. Simon, Kenneth. Digest of Educational Statistics. Washington,D.C.: GPO, September, 1970.

BIBLIOGRAPHY

58. Hatyat, F., ed. Evaluation in Education. Report on an International Meeting of Experts held at UNESCO Institute for Education. Hamburg, March 17-22, 1958.

59. Hill, John A. Kindergarten Handbook. Baton Rouge: Louisiana State Department of Education, 1967.

60. Howsden, Arley L., et al. Report of Chico State College Gridley Farm Labor Camp, Summer Project. California: Chico State College, 1964.

61. Hunt, J. Mc Vicker. Intelligence and Experience New York: Ronald Press, 1961.

62. Hurd, Gordon E. Preprimary Enrollment, October, 1969. Washington, D.C.: GPO, 1970.

63. _____ Draft of Preprimary Enrollment, October, 1970. xerox.

64. _____ Preprimary Enrollment Trends of Children Under Six, 1964-1968. Washington, D.C.: GPO, February, 1971

65. Hymes, James. Early Childhood Education: An Introduction to the Profession. Washington, D.C.: NAEYC, 1968.

66. Institute for Developmental Studies. The Deutsch Model. New York: New York University Institute for Developmental Studies, 1968.

67. Johns, Roe, et al. Dimensions of Educational Need. Florida: National Educational Finance Project, 1969.

68. _____. Economic Factors Affecting the Financing of Education. Florida: National Educational Finance Project, 1970.

69. _____. Planning to Finance Education. Florida: National Educational Finance Project, 1971.

70. Johnson, Denis. Projected Population and Labor Force of Women 16 to 49 Years Old, by Age and Presence of Children under 5, 1960 to 2000. Unpublished xerox.

71. Jones, Elizabeth and Prescott, Elizabeth. An Institutional Analysis of Day Care Programs, Part II. California: Pacific Oaks College, July, 1970.

72. Kessen, William. "The Near Future Research with Young Children" in Grotberg, Edith, ed. Designs and Proposals for Early Childhood Research: A New Look.

BIBLIOGRAPHY

73. Knitzer, Jane and Parker, Ronald. Background Paper on Day Care and Preschool Services: Trends in the Nineteen-Sixties and Issues for the Nineteen-Seventies. Washington, D.C.: HEW, Office of Child Development, 1970.

74. LaCrosse, Robert. Day Care: Effects and Affects. California: Pacific Oaks College, mimeo, 1970.

75. _____ and Lee, Patrick, eds. The First Six Years of Life: A Report on Current Research and Educational Practice. Genetic Psychology Monograph 82, 161-266, 1970.

76. Lavatelli, C.B. Critical Overview of Early Childhood Education Programs. Illinois: Illinois University, Urbana, National Laboratory for Early Childhood Education, April 3,1968.

77. LaVeck, Gerald, ed. Perspectives on Human Deprivation: Biological, Psychological and Sociological. Maryland: National Institute of Mental Health, 1968.

78. Lichtenberg, Philip and Norton, Dolores. Cognitive and Mental Development in the First Five Years of Life. Maryland: National Institute of Mental Health, 1970.

79. Locke, Marvin and Theimer, William. Research and Teacher Education. California: University of the Pacific, 1970.

80. _____, An Evaluation of Professional Development Centers, 1969-1970. California: University of the Pacific, 1970.

81. Mc Fadden, Dennis. Preschool Education. Ohio: Department of Education, September, 1969.

82. Mc Loone, Eugene P. and Mushkin, Selma. Local School Expenditures: 1970 and Projections. Illinois: Council of State Governments, November, 1965.

83. Mc Lure, William and Pence, Audra. Early Childhood and Basic Elementary Education. Illinois: University of Illinois at Urbana-Champaign, 1970.

84. Mindess, Mary and Keliher, Alice. Review of Research Related to the Advantages of Kindergarten: Bulletin Order Leaflet, 1966-1967. Washington, D.C.: American Childhood Education International, 1967.

85. The Montogomery County Council of Cooperative Nursery Schools. A Parent's Handbook for Cooperative Nursery Schools. Maryland: MCCCNS, 1967.

86. National Center for Educational Statistics. Projections of Educational Statistics to 1979-1980. Washington, D.C.: GPO, 1971.

87. National Education Association. Prevention of Failure. Washington, D.C: NEA, 1965.

BIBLIOGRAPHY

88. _____, Research Division, Nursery School Education, 1966-1967. Washington, D.C.: NEA, 1968.

89. _____, Research Division, Kindergarten Education in Public Schools, 1967-1968. Washington, D.C.: NEA, 1969.

90. _____, Research Division, Salary Schedules for Teachers, 1970-1971. Washington, D.C.: NEA, 1970.

91. National Committee on the Education of Migrant Children. Wednesday's Children. New York: National Committee on the Education of Migrant Children, 1971.

92. National Committee for Support of the Public Schools. News. Washington, D.C.: NCSPS, April, 1970.

93. National Instructional Television Center. Ripples Press Kit. Indiana: NITV, April, 1971.

94. National Public Relations Association. Preschool Breakthrough: What Works in Early Childhood Education. Washington, D.C.: National Public Relations Association, 1970.

95. Naylor, Naomi L. Migrant Day Care Program. Pennsylvania: Pennsylvania State University, March, 1962.

96. Nedler, Shari. An Early Childhood Education Model: A Bilingual Approach. Austin, Texas: Southwest Educational Debelopment Laboratory, 1967.

97. Nolan, Jeanada. Application Packet for State Preschool Programs. California: Department of Education, May 14, 1971 mimeo.

98. Opatoshu, Lillan, et al. Interim Head Start Report. New York: Child Study Association of America, July, 1970 mimeo.

99. Palmer, Judith. Pre-School Education Pros and Cons. Toronto: Toronto Board of Education, April, 1966.

100. Parent Cooperative Preschools International. Information Report for 1970: Focus on Children and Youth. Bethesda, Maryland: Parent Cooperative Preschools International, 1970.

101. _____. Journal. Vol. I no. 3, Spring, 1971.

102. The Planning Committee, ed. Proceedings: Early Childhood Intervention Research Conference. Florida: Institute of Exceptional Children and Adults and Early Childhood Education, March, 1970 mimeo.

BIBLIOGRAPHY

103. Pollak, R. ed. Early Education. Washington, D.C.: D.C. Citizens for Better Education, September, 1968.

104. Porter, Philip J., et al. Evaluation of Head Start Educational Program in Cambridge, Massachusetts, Final Report. Cambridge, Mass.: Harvard University, December, 1965.

105. Prescott, Elizabeth. The Large Day Care Center as a Child-Rearing Environment. California: Pacific Oaks College. mimeo, undated.

106. Rambusch, Nancy McCormick. Views on Preschool Education and Day Care. ERIC: ED 040753, 1969.

107. Ramsey, Wallace and Boucher, Marguerite. The Influence of a Head Start Program on Reading Achievement. Seattle: International Reading Association Annual Convention, May 4-6, 1967.

108. Reed, Mildred A. Where is Day Care Heading? Washington: Seattle Day Nursery Association Annual Meeting, February 8, 1968.

109. Reger, Roger, ed. Preschool Programming of Children with Disabilities. Springfield, Illinois: Charles G. Thomas, 1970.

110. Rosenberg, Beatrice. Day Care Facts. Washington, D.C.: U.S. Dept. of Labor, Women's Bureau, May 1970.

111. Searcy, Ellen. Interim Report on Federal Learning Programs. Made to the National Program on Early Childhood Education, December 1970, mimeo.

112. Segalman, Ralph. The Immigrant Poor and the Residual Poor. New Hampshire: Southern Sociological Association Meeting, April 5, 1966.

113. Shapire, Elliot, et.al. Involving Community and Parents. New Hampshire: 1967.

114. Sprigle, Herbert, et al. A Fresh Approach to Early Childhood Education and A Study of Its Effectiveness Learning to Learn Program. Jacksonville, Florida: Learning to Learn, Inc., 1968.

115. South Central Regional Educational Laboratory Corporation. Educational Day Care: An Installation Manual. Little Rock, Arkansas: SCRELC, 1969.

116. Tamminen, Armas W., et al. An Evaluation of Preschool Training Program for Educationally Deprived Children Final Report. Minnesota: University of Minnesota.

117. Texas Education Agency. Guidelines for Planning Preschool Programs under Title I of the Elementary and Secondary Act of 1953. Austin: Division of Compensatory Education, 1967.

118. _____. Texas Child Migrant Program. Texas: Texas Education Agency, December, 1970.

BIBLIOGRAPHY

119. Turner, Robert and Di Ford, Edward. Follow-Up Study of Pupils of Differing Preschool Experiences. Paper presented at Annual Meeting of American Educational Research Association, Minneapolis, Minnesota, March, 1970.

120. U.S. Congress. House Committe on Education and Labor. Needs of Elementary and Secondary Education for the Seventies. Washington, D.C.:GPO, March, 1970.

121. _____. Senate Finance Committee. Child Care: Data and Materials. Washington, D.C.: GPO, June 16, 1971.

122. U.S. Department of Commerce. Projections of the Population of the United States; by Age and Sex, 1970-2020. Series P-25, no. 448. Washington, D.C.: GPO, August 6, 1970.

123. _____. Bureau of the Census. School Enrollment: October, 1970. Series P-25, no. 222. Washington, D. C. : GPO, June 28, 1971.

124. _____. Bureau of the Census. Consumer Income Series P-60 no. 64. Washington, D.C.: GPO, Oct. 6, 1969.

125. _____. Bureau of the Census. Consumer Income Series P-60 no. 71 , Washington, D. C. : GPO, July 16, 1970.

126. _____. Bureau of the Census. Consumer Income Series P-60 no. 75. Washington, D.C.: GPO, Dec. 14, 1970.

127. _____. Bureau of the Census. Consumer Income Series P-60 no. 77. Washington, D.C.: GPO, May 7, 1971.

128. U.S. Department of Health, Education and Welfare. Standards and Costs for Day Care. Washington, D.C.: Office of Education, 1969.

129. _____ _____ , OCD. Headstart. Washington, D. C.: GPO, 1970.

130. _____. Office of Child Development. Parent and Child Centers. Washington, D.C.: GPO, 1970.

131. _____. Office of Education. The Education Professions 1968. Washington, D. C.: GPO, 1969.

132. U.S. Department of Labor. Women's Bureau. Why Women Work. Washington, D.C.: GPO, 1970.

133. _____. Day Care, An Employer's Plus. Washington, D.C.: GPO, 1971.

BIBLIOGRAPHY

134. _____. Working Mothers and the Need for Child Care. Washington, D.C.: GPO, May, 1967.

135. _____. Women Workers Today. Washington, D.C.: GPO, June, 1970.

136. _____. Day Care Services: Industry's Involvement, Bulletin 296. Washington, D.C.: Dept. of Labor, 1971.

137. _____. Child Care Services Provided by Hospitals, Bulletin 295. Washington, D.C.: Dept. of Labor, 1970.

138. _____. Bureau of Labor Statistics. "Survey Shows Substantial Rise in Number of Young Children with Working Mothers" Press Release. May 26, 1971.

139. U.S. National Committee for Early Childhood Education. The Preparation and Status of Preschool Teachers: A Survey. Paris, France: UNESCO, Dec., 1965.

140. Urban Research Corporation. Industry and Day Care. Illinois: Urban Research Corporation, c. 1970.

141. Vilsak, Elaine. Programs for the Preschool Child. Pennsylvania: Pittsburgh University School of Education, July, 1966.

142. Weber, Evelyn. Early Childhood Education: Perspectives on Change. Worthington, Ohio; Charles A. Jones Publishing Co., 1970.

143. Weikart, David. Research in Early Childhood Education. Paper presented at the First Annual Hyman Blumberg Symposium, Johns Hopkins University, February 1, 1971.

144. Westinghouse Learning Corporation. Day Care Survey 1970. Washington, D.C.: Westinghouse Learning Corporation, Westat Research Inc., April 16, 1971.

145. Whitaker, Adelaide. Report of the Sixth Annual Conference of Parent Cooperatives Preschools International: The Cooperative School. mimeo.

146. White, Burton. An Analysis of Excellent Early Educational Practices: Preliminary Report. Cambridge, Massachusetts; Harvard University, 1971 mimeo.

147. _____. The Role of Experience in the Behavioral Development of Human Infants: Current Status and Recommendations. Cambridge, Mass.: Harvard University, 1970 mimeo.

148. 1970 White House Conference on Children. Report to the President. Washington, D.C.: GPO, 1971.

149. _____. Profiles of Children. Washington, D.C.: GPO, 1970.

BIBLIOGRAPHY

150. Widmer, Emmy Louise. The Critical Years: Early Childhood Education: At the Crossroads. Scranton, Pennsylvania: International Textbook Co., c. 1970

151. Zigler, Edward. Task Force Report on Child Care and Development. Washington, D.C.: U.S. DHEW, Office of Child Development, 1970.

152. _____. 1969 Testimony, Congressional Hearing on Child Development Act of 1969, mimeo.

Articles

153. Ahlfeld, Kathy. "Pressure Cooker Teaching: How It's Working Out" Nation's Schools vol. 83 no. 4, April, 1969, pp. 58-62.

154. Allen, James. "Speech to the National School Board Association Conference" National Committee for Support of Public Schools News, April, 1970.

155. Argy, William. "Montessori vs Orthodox" Rehabilitation Literature, October, 1965, vol. 26 no. 10, pp. 294-304.

156. Ayers, J.B. and Baslow, W.L. "Evaluation of the Norms and Reliability of the PPVT for Preschool Subjects" Education and Psychology Monthly vol. 27 part 2, Winter, 1967, pp. 1069-1075.

157. Ayers, Jerry and Powell, Larry. "What Can Young Children Learn and When?" Nation's Schools vol. 83 no. 5, May, 1969. pp. 82-83.

158. Ball, Samuel and Bogatz, Gerry. "A Summary of the Major Findings" The First Year of Sesame Street: An Evaluation New Jersey: ETS, Oct. 1970.

159. Berson, Minnie. "Inside the Open Classroom" American Education, May 1971, pp. 11-15.

160. Biber, Barbara. "Challenge Ahead for Early Childhood Education" Young Children, vol. 24 no. 4, March 1969, pp. 196-205.

161. Boyer, Susan. "The Day Care Jungle" The Saturday Review, February 20, 1971, pp. 50-51.

162. Bromwich, Rose. "Early Education--Current Concepts and Directions" Elementary English, vol. 46 no. 6, October 1969, pp. 741-747.

163. Bruner, Jerome S. "Poverty and Childhood " The Conditions for Educational Equality. CED Supplemental Paper #34, 1970.

164. Brunner, C; Pines, M; and Spodek, B. " How and What to Teach the Very Young Child " NEA Journal, 57:43-6;71, Feb., 1968.

BIBLIOGRAPHY

165. "Business Starts to Fill Preschool Void" Nation's Schools vol. 84 no. 5, November, 1969, pp. 24,26.

166. Butterfield, Earl and Zigler, Edward. "Motivational Aspects of Changes in IQ Test Performance of Culturally Deprived Nursery School Children" Child Development vol. 39 no. 1, March 1968, pp.1-13.

167. Caldwell, Bettye. "Impact of Interest in Early Cognitive Stimulation" Perspectives of Child Psychopathology (tentative title) ed. Herbert Rie, 1971.

168. _____. "The Rationale for Early Intervention" Exceptional Children, Summer, 1970, pp, 717-725.

169. _____ "The Effects of Psychosocial Deprivation on Human Development In Infancy" Merrill-Palmer Quarterly of Behavior and Development, vol. 16 no. 3, 1970, pp.260-277.

170. _____. "What is the Optimal Learning Environment for the Young Child?" American Journal of Orthopsychiatry, January 1967, vol. 37 no. 1, pp. 8-21.

171. _____. "A Timid Giant Grows Bolder" Saturday Review, February 20, 1971, pp. 47-49,65-66.

172. _____ and Smith, Lucille. "Day Care for the Very Young--Prime Opportunity for Primary Prevention" American Journal of Public Health, vol. 60 no. 4, April 1970, pp690-697.

173. Connell, David. "How Sesame Street Raised and Spent Eight Million Dollars" Dividend, Winter 1970, pp. 1-5.

174. Cowles, Milly. "Four Views of Learning and Development" Educational Leadership, vol. 28 no. 8, May 1971, pp. 790-795.

175. "Day Care Centers." Childhood Education, February, 1969, pp. 311-320.

176. Dayton, Delbert, "Early Malnutrition and Human Development" Children, vol. 16 no. 6, Nov-Dec., 1969, pp. 211-217.

177. Deutsch, Martin. "The Disadvantaged Child and the Learning Process" in Education in Depressed Areas. ed. A.H. Passow. New York: Columbia University, Teachers' College Press, 1963, pp. 163-179.

178. Edwards, E. "Family Day Care in a Community Action Program" Children, 15:55-58, March, 1968.

BIBLIOGRAPHY

179. Elkind, David. "Preschool Education: Enrichment or Instruction" Childhood Education, Feb., 1969, pp. 321-328.

180. Elliott, David L. and Kamii, Constance. "Evaluation of Evaluations" Educational Leadership, May 1971, pp. 827-831.

181. _____. "Needed: A New Early Childhood Educator" Educational Leadership, May 1971, pp. 835-839.

182. Firmon, William D., et al., "The Challenge of Change in School Finance" Proceedings of the National Conference on School Finance. St. Louis, Missouri: April 2-4, 1967.

183. "The 4-C Program" Children, vol. 16 no. 2, March-April, 1969, pp. 76-77.

184. Fowler, William. "The Effect of Early Stimulation:The Problem of Focus in Developmental Stimulation" Merrill-Palmer Quarterly of Behavior and Development, vol. 15 no. 2, 1969, pp. 157-170.

185. Friedlander, B.Z. "Bereiter-Engelmann Approach: Review of Teaching Disadvantaged Children in the Preschool" Educational Forum, vol. 32 no. 3, March 1968, pp. 359-362.

186. Gardner, Bruce D. "Early Childhood Education: A Look Ahead" Contemporary Education, vol.40 no. 3, January 1969, pp. 142-144.

187. Gordon, Ira. "Reaching the Young through Parent Education" Childhood Education, vol. 46 no. 5, Feb. 1970, pp. 247-249.

188. _____. "Self Help Approach: Parents as Teachers" Compact, December 1969, pp. 32-35.

189. Gorton, Harry B. and Robinson, Richard L. "For Better Results-A Full-Day Kindergarten" Education, vol. 89 no. 2, March 1969, pp.217-221.

190. Gover, Katherine R. and Waldman, Elizabeth. "Children of Women in the Labor Force" Monthly Labor Review. vol. 94 no. 7, July 1971, pp. 19-25.

191. Greenberg, Polly. "Low Cost State Strategies with a New Look" Compact, Dec. 1969, pp. 26-32.

192. Grossman, Bruce. "The Academic Grind at Age 3" Educational Digest, vol. 34 no. 7, March 1969, pp. 26-28.

193. Grossman, B.D. "Early Childhood Education and the New Frontiers" Elementary Schools, vol. 68, April 1968, pp. 340-342.

BIBLIOGRAPHY

194. Hartle, Helen. "Early Childhood Program in the States" Compact. December, 1969, pp. 14-19.

195. Hedges, Janice N. "Prospects for Growth in Preprimary Education" Monthly Labor Review, vol. 93 no. 7, July 1970, pp. 40-44.

196. Hodges, Walter L. "Analyzing Early Childhood Education Programs: Administrative Considerations" Educational Leadership, May 1971.

197. Hunt, J. Mc Vicker. "Parent and Child Centers: Their Basis in the Behavioral and Educational Sciences" American Journal of Orthopsychiatry, vol. 41 no. 1, January 1971, pp. 13-38.

198. _____. "Has Compensatory Education Failed? Has It Been Attempted?" Harvard Educational Review, vol. 39 no. 2, Spring 1969, pp. 278-300.

199. Hymes, James L. "Who Is Pressuring Preschoolers?" The PTA Magazine, vol. 63 no. 1, September 1968, pp. 12-14.

200. Jones, Elizabeth and Prescott, Elizabeth. "Day Care for Children" Children, March-April 1971, pp. 54-58.

201. Keliher, Alice V. "Parent and Child Centers-What They Are, Where They Are Going" Children, vol. 16 no. 2, Mareh-April 1969, pp. 63-66.

202. Keyserling, Mary Dublin. "Lifting our Sights---Meeting Our Child Day Care Needs" Speech at First Annual Advisory Council Meeting, Maryland 4-C Committee, April 27, 1971.

203. _____ "The Challenge of Day Care Needs" Speech at the Annual Meeting of American Medical Women Association, Nov. 9, 1970

204. Kohlberg, Lawrence. "Early Education: A Cognitive - Developmental View" Child Development, vol. 39 no. 4, D c. 1968, pp. 1014-1057.

205. _____ and Mayer, Rochelle. "Preschool Research and Preschool Educational Objectives: A Critique and A Proposal" in Designs and Proposals for Early Childhood Research, Edith Grotberg, ed.

206. Lavatelli, Celia. "Contrasting Views of Early Childhood Education" Childhood Education, vol. 46 no. 5, Feb. 1970, pp. 239-246.

BIBLIOGRAPHY

207. Lazar, Irving. "Organizing Child Development Programs" Appalachia, vol. 3 no.4, January 1970, pp. 1-5.

208. _____ and Rosenberg, Mae. "Day Care in America" Day Care: Resources for Decisions. Edith Grotberg, ed. Washington, D.C.: DHEW, OEO, 1971.

209. Lesser, Gerald. "The Need for Diversity in American Day Care" Day Care: Resources for Decisions. Edith Grotberg, ed. Washington, D.C.: DHEW, OEO, 1971.

210. Lipson, Rosella. "A Mobile Preschool" Young Children, vol. 24 no. 3, January 1969, pp. 154-156.

211. Margolin, Edythe. "Crucial Issues in Contemporary Early Childhood Education" Childhood Education, May 1969, pp. 500-504.

212. McCarthy, Janet. "Changing Parent Attitudes and Improving Language and Intellectual Abilities of Culturally Disadvantaged 4 Year Old Children through Parent Involvement" Contemporary Education, January 1969, pp. 166-168.

213. McQueen, M. "Early Childhood Education: Major Goals in Four Areas" Education Digest, vol.33, Feb. 1968, pp. 27-30.

214. Mead, Margaret. "Working Mothers and Their Children" Childhood Education, Nov. 1970, pp. 66-71.

215. Miller, Joyce. "Unions and Day Care Center for Children of Working Mothers" Child Welfare, vol. 50 no. 1, Jan. 1971, pp. 38-39.

216. Mink, Patsy. "Congressional Action Proposed" Compact, Dec. 1969, pp. 20-21.

217. Montes, Miguel. "Meeting California Preschool Needs" Compact, Dec. 1969, pp. 39-41.

218. Movat, Lucia. "Child-Parent Education Centers" Instructor, vol. 79 no. 1, Aug.-Sept. 1969, pp. 156-157.

219. Murphy, Lois. "Multiple Factors in Learning" Childhood Education, February 1969.

220. _____. "Children Under 3--Finding Ways to Stimulate Development: I. Issues in Research" Children, vol. 16 no. 2, March-April 1969, pp. 46-52.

BIBLIOGRAPHY

221. Neel, Ann. "Trends and Dilemmas in Child Welfare Research" Child Welfare, vol. 50 no. 1, Jan. 1971, pp. 25-32.

222. Nimnicht, Glen. "A New State Priority: Early Childhood Programs" Compact, vol. 3 no. 6, Dec. 1969, pp.3-6.

223. Passantino, Richard. "Swedish Preschools: Environment of Sensitivity" Childhood Education, May 1971, pp. 406-411.

224. Peterson, Esther. "Labor and Education" Childhood Education, vol. 46 no. 1, Sept.-Oct. 1969, pp. 22-23.

225. Pierce, William. "Day Care in the 1970's: Planning for Expansion" Child Welfare, vol. 50, no. 3, March 1971, pp. 160-163.

226. Rockwell, Robert and Endies, Jeanette. "Nutrition in Day Care Centers" Young Children, vol. 25 no. 1, October 1969, pp. 20-22.

227. Redl, Helen. "The Young Child in the Soviet Union" Young Children, vol. 24 no. 2, Dec. 1968, pp. 94-99.

228. Rohwer, William. "On Attaining the Goals of Early Childhood Education" Designs and Proposals for Early Childhood Research: A New Look, Grotberg, ed. Washington, D. C.: OEO, 1971.

229. Schaefer, Earl. "Need for Early and Continuing Education" Education of the Infant and Young Child. New York: Academic Press, Inc., 1970.

230. Roth, Herrick. "The Family Caught in the Middle" Compact, vol. 3 no. 6, Dec. 1969, pp. 42-43.

231. Schmitthaus, C. "The Professionalization of Teaching in Early Childhood Education" Journal of Teacher Education, vol. 20 no. 2, Summer 1969, pp. 188-190.

232. Senn, Milton. Early Childhood Education--For What Goals?" Children, vol. 16 no.1, Jan.-Feb. 1969, pp. 8-13.

233. Travis, Sophia C. "The U.S. Labor Force: Projections to 1985" Monthly Labor Review, Feb. 1970, pp. 3-12.

234. Waldman, Elizabeth. "Marital and Family Characteristics of Workers, March, 1966" Monthly Labor Review, April 1967, pp. 29-36.

235. _____. "Marital and Family Characteristics of Workers, March 1967" Monthly Labor Review, April 1968, pp. 14-22.

BIBLIOGRAPHY

236. _____. "Marital and Family Characteristice of Workers, March 1968, 1969" Monthly Labor Review, May 1970, pp. 18-27.

237. _____ and Young, Anne. "Marital and Family Characteristics of Workers, March 1970" Monthly Labor Review, March 1971, pp. 46-50.

238. Weber, Evelyn. "Forces for Change in Early Childhood Education" Contemporary Education, vol. 40 no 3, Jan. 1969, pp. 138-141.

239. "When First Grade Comes, Will Your Pupils Be Ready?" Grade School Teacher, vol. 85, Summer 1967, p. 208.

240. White, Burton, et at. "Observations on the Development of Visually Directed Reaching" Child Development, vol. 35, 1964, pp. 349-364.

241. Woolman, Myron. "A Systems Approach to Preschool Education" Designs and Proposals for Early Childhood Research: A New Look . Grotberg, Edith, ed. Washington, D.C.: OEO, 1971 (mimeo).

242. Zigler, Edward. "Training the Intellect Versus Development of the Child" Childhood Education, May 1970, pp. 402-412.

U. S. GOVERNMENT PRINTING OFFICE : 1972 O - 453-405